ENGELS

ANTI-DÜHRING

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F. Engels

FREDERICK ENGELS

ANTI-DÜHRING

HERR EUGEN DÜHRING'S REVOLUTION IN SCIENCE

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PUBLISHER'S NOTE

This translation of Frederick Engels's *Anti-Dühring* has been made from the third German edition (1894).

Those parts of the book from which the author subsequently composed his pamphlet *Socialism: Utopian and Scientific*, namely: "Introduction," Chapter I, "General"; Part III, "Socialism," Chapter I, "Historical," and Chapter II, "Theoretical," are reproduced from the authorized English translation of the pamphlet. Words and passages in the pamphlet which were not included in the above-mentioned parts of *Anti-Dühring* are here given in square brackets. The most important formulations from the extant rough copy of the "Introduction" are given in footnotes, as are certain passages in the pamphlet which differ from the corresponding passages of the original German edition of *Anti-Dühring*.

The book is preceded by the author's prefaces to the first three German editions.

Appended to it are: the "Old Preface" afterwards assigned by Engels to the materials on the *Dialectics of Nature* then in preparation; selected excerpts from his preparatory writings for *Anti-Dühring*; the article "Infantry Tactics, Derived from Material Causes," and the "Notes" by Engels to *Anti-Dühring*.

The book is supplied with a subject and a name index.

Marx's *Capital*, Vol. I, is quoted from the Moscow English edition, 1954.

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PREFACES TO THE THREE EDITIONS

I

The following work is by no means the fruit of any "inner urge." On the contrary.

When three years ago Herr Dühring, as an adept and at the same time a reformer of socialism, suddenly issued his challenge to his century, friends in Germany repeatedly urged on me their desire that I should subject this new socialist theory to a critical examination in the central organ of the Social-Democratic Party, at that time the *Volksstaat*. They thought this absolutely necessary in order to prevent a new occasion for sectarian splitting and confusion from developing within the Party, which was still so young and had but just achieved definite unity. They were in a better position than I was to judge the situation in Germany, and I was therefore duty bound to accept their view. Moreover, it became apparent that the new convert was being welcomed by a section of the socialist press with a warmth which it is true was only extended to Herr Dühring's good will, but which at the same time also indicated that in this section of the Party press there existed the good will, precisely on account of Herr Dühring's good will, to take also, without examination, Herr Dühring's doctrine into the bargain. There were, besides, people who were already preparing to spread this doctrine in a popularized form among the workers. And finally Herr Dühring and his little sect were using all the arts of advertisement and intrigue to

force the *Volksstaat* to take a definite stand in relation to the new doctrine which had come forward with such mighty pretensions.

Nevertheless it was a year before I could make up my mind to neglect other work and get my teeth into this sour apple. It was the kind of apple that, once bitten into, had to be completely devoured; and it was not only very sour, but also very large. The new socialist theory was presented as the ultimate practical fruit of a new philosophical system. It was therefore necessary to examine it in its connection with this system, and in doing so to examine the system itself; it was necessary to follow Herr Dühring into that vast territory in which he dealt with all things under the sun and with some others as well. That was the origin of a series of articles which appeared in the Leipzig *Vorwärts*, the successor of the *Volksstaat*, from the beginning of 1877 onwards and are here presented as a connected whole.

It was thus the nature of the object itself which forced the criticism to go into such detail as is entirely out of proportion to the scientific content of this object, that is to say, of Dühring's writings. But there are also two other considerations which may excuse this length of treatment. On the one hand it gave me, in connection with the very diverse subjects to be touched on here, the opportunity of setting forth in a positive form my views on controversial issues which are today of quite general scientific or practical interest. This has been done in every single chapter, and although this work cannot in any way aim at presenting another system as an alternative to Herr Dühring's "system," yet it is to be hoped that the reader will not fail to observe the connection inherent in the various views which I have advanced. I have already had proof enough that in this respect my work has not been entirely fruitless.

On the other hand, the "system-creating" Herr Dühring is by no means an isolated phenomenon in contemporary Germany. For some time now in Germany systems of cosmogony, of natural philosophy in general, of politics, of economics, etc., have been springing up by the dozen overnight, like mushrooms. The most insignificant *doctor philosophiae* and even a student will not go in for anything less than a complete "system." Just as in the modern state it is presumed that every citizen is competent to pass judgment on all the issues on which he is called to vote; and just as in economics it is assumed that every consumer is a connoisseur of all the commodities which he has occasion to buy for his maintenance—so similar assumptions are now to be made in science. Freedom of science is taken to mean that people write on every subject which they have not studied, and put this forward as the only strictly scientific method. Herr Dühring, however, is one of the most characteristic types of this bumptious pseudo-science which in Germany nowadays is forcing its way to the front everywhere and is drowning everything with its resounding—sublime nonsense. Sublime nonsense in poetry, in philosophy, in politics, in economics, in historiography; sublime nonsense in the lecture-room and on the platform, sublime nonsense everywhere; sublime nonsense which lays claim to a superiority and depth of thought distinguishing it from the simple, commonplace nonsense of other nations; sublime nonsense, the most characteristic mass product of Germany's intellectual industry—cheap but bad—just like other German-made goods, only that unfortunately it was not exhibited along with them at Philadelphia. Even German socialism has lately, particularly since Herr Dühring's good example, gone in for a considerable amount of sublime nonsense, producing various persons who give themselves airs about "science," of which they

"really never learnt a word." This is an infantile disease which marks, and is inseparable from, the incipient conversion of the German student to Social-Democracy, but which our workers with their remarkably healthy nature will undoubtedly overcome.

It was not my fault that I had to follow Herr Dühring into realms where at best I can only claim to be a dilettante. In such cases I have for the most part limited myself to putting forward the correct, undisputed facts in opposition to my adversary's false or distorted assertions. This applies to jurisprudence and in some instances also to natural science. In other cases it has been a question of general views connected with the theory of natural science—that is, a field where even the professional natural scientist is compelled to pass beyond his own speciality and encroach on neighbouring territory—territory on which he is, therefore, as Herr Virchow has admitted, just as much a "semi-initiate" as any one of us. I hope that in respect of minor inexactitudes and clumsiness of expression, I shall be granted the same indulgence as is shown to one another in this domain.

Just as I was completing this preface I received a publisher's notice, composed by Herr Dühring, of a new "authoritative" work of Herr Dühring's: *Neue Grundgesetze zur rationellen Physik und Chemie.*[1] Conscious as I am of the inadequacy of my knowledge of physics and chemistry, I nevertheless believe that I know my Herr Dühring, and therefore, without having seen the work itself, think that I am entitled to say in advance that the laws of physics and chemistry put forward in it will be worthy to take their place, by their erroneousness or platitudinousness, among the laws of economics, world schematism, etc., which were discovered earlier by Herr

[1] *New Basic Laws for Rational Physics and Chemistry.—Ed.*

Dühring and are examined in this book of mine; and also that the rhigometer, or instrument constructed by Herr Dühring for measuring extremely low temperatures, will serve as a measure not of temperatures either high or low, but simply and solely of the ignorant arrogance of Herr Dühring.

London, June 11, 1878

II

I had not expected that a new edition of this book would have to be published. The subject-matter of its criticism is now practically forgotten; the work itself was not only available to many thousands of readers in the form of a series of articles published in the Leipzig *Vorwärts* in the course of 1877 and 1878, but also appeared in its entirety as a separate book, of which a large edition was printed. How then can anyone still be interested in what I had to say about Herr Dühring years ago?

I think that I owe this in the first place to the fact that this book, as in general almost all my works that were still current at the time, was prohibited within the German Empire immediately after the Anti-Socialist Law was promulgated. To anyone whose brain has not been ossified by the hereditary bureaucratic prejudices of the countries of the Holy Alliance, the effect of his measure must have been self-evident: a doubled and trebled sale of the prohibited books, and the exposure of the impotence of the gentlemen in Berlin who issue prohibitions and are unable to enforce them. Indeed the kindness of the Imperial Government has brought me more new editions of my minor works than I could really cope with; I have had no time to make a proper revision of

the text, and in most cases have been obliged simply to allow it to be reprinted as it stood.

But there was also another factor. The "system" of Herr Dühring which is criticized in this book ranges over a very wide theoretical domain; and I was compelled to follow him wherever he went and to oppose my conceptions to his. As a result, my negative criticism became positive; the polemic was transformed into a more or less connected exposition of the dialectical method and of the communist world outlook fought for by Marx and myself—an exposition covering a fairly comprehensive range of subjects. After its first presentation to the world in Marx's *Poverty of Philosophy* and in the *Communist Manifesto*, this mode of outlook of ours, having passed through an incubation period of fully twenty years before the publication of *Capital*, has been more and more rapidly extending its influence among ever-widening circles, and now finds recognition and support far beyond the boundaries of Europe, in every country which contains on the one hand proletarians and on the other undaunted scientific theoreticians. It seems therefore that there is a public whose interest in the subject is great enough for them to take into the bargain the polemic against the Dühring tenets merely for the sake of the positive conceptions developed alongside this polemic, in spite of the fact that the latter has now largely lost its point.

I must note in passing that inasmuch as the mode of outlook expounded in this book was founded and developed in far greater measure by Marx, and only in an insignificant degree by myself, it was self-understood between us that this exposition of mine should not be issued without his knowledge. I read the whole manuscript to him before it was printed, and the tenth chapter of the part on economics ("From the *Critical History*") was

written by Marx, but unfortunately had to be shortened somewhat by me for purely external reasons. As a matter of fact, we had always been accustomed to help each other out in special subjects.

With the exception of one chapter, the present new edition is an unaltered reprint of the former edition. For one thing, I had no time for a thoroughgoing revision, although there was much in the presentation that I should have liked to alter. Besides I am under the obligation to prepare for the press the manuscripts which Marx has left, and this is much more important than anything else. Then again, my conscience rebels against making any alterations. The book is a polemic, and I think that I owe it to my adversary not to improve anything in my work when he is unable to improve his. I could only claim the right to make a rejoinder to Herr Dühring's reply. But I have not read, and will not read, unless there is some special reason to do so, what Herr Dühring has written concerning my attack; in point of theory I have finished with him. Besides, I must observe the rules of decency in literary warfare all the more strictly in his regard, because of the despicable injustice that has since been done to him by the University of Berlin. It is true that the University has not gone unpunished. A university which so abases itself as to deprive Herr Dühring, in circumstances which are well known, of his academic freedom must not be surprised to find Herr Schweninger forced on it in circumstances which are equally well known.

The only chapter in which I have allowed myself some additional elucidation is the second of Part III, "Theoretical." This chapter deals simply and solely with the exposition of a pivotal point in the world outlook for which I stand, and my adversary cannot therefore complain if I attempt to state it in a more popular form

and to make it more coherent. And there was in fact a special reason for doing this. I had revised three chapters of the book (the first chapter of the "Introduction" and the first and second of Part III) for my friend Lafargue with a view to their translation into French and publication as a separate pamphlet; and after the French edition had served as the basis for Italian and Polish editions, a German edition was issued by me under the title: *Die Entwicklung des Sozialismus von der Utopie zur Wissenschaft.*[1] This ran through three editions within a few months, and also appeared in Russian and Danish translations. In all these editions it was only the chapter in question which had been amplified, and it would have been pedantic, in the new edition of the original work, to have tied myself down to its original text instead of the later text which had become known internationally.

Whatever else I should have liked to alter relates in the main to two points. First, to the history of primitive society, the key to which was provided by Morgan only in 1877. But as I have since then had the opportunity, in my work: *Der Ursprung der Familie, des Privateigentums und des Staats*[2] (Zürich, 1884), to work up the material which in the meantime had become available to me, a reference to this later work meets the case.

The second point concerns the section dealing with theoretical natural science. There is much that is clumsy in my exposition and much of it could be expressed today in a clearer and more definite form. I have not allowed myself the right to improve this section, and for that very reason am under an obligation to criticize myself here instead.

[1] Published in English under the title: *Socialism: Utopian and Scientific.—Ed.*

[2] *The Origin of the Family, Private Property and the State.—Ed.*

Marx and I were pretty well the only people to rescue conscious dialectics from German idealist philosophy and apply it in the materialist conception of nature and history. But a knowledge of mathematics and natural science is essential to a conception of nature which is dialectical and at the same time materialist. Marx was well versed in mathematics, but we could keep up with the natural sciences only piecemeal, intermittently and sporadically. For this reason, when I retired from business and transferred my home to London, thus enabling myself to give the necessary time to it, I went through as complete as possible a "moulting," as Liebig calls it, in mathematics and the natural sciences, and spent the best part of eight years on it. I was right in the middle of this "moulting" process when it happened that I had to occupy myself with Herr Dühring's so-called natural philosophy. It was therefore only too natural that in dealing with this subject I was sometimes unable to find the correct technical expression, and in general moved with considerable clumsiness in the field of theoretical natural science. On the other hand, my lack of assurance in this field, which I had not yet overcome, made me cautious, and I cannot be charged with real blunders in relation to the facts known at that time or with incorrect presentation of recognized theories. In this connection there was only one unrecognized genius of a mathematician who complained in a letter to Marx that I had made a wanton attack upon the honour of $\sqrt{-1}$.

It goes without saying that my recapitulation of mathematics and the natural sciences was undertaken in order to convince myself also in detail—of what in general I was not in doubt—that in nature, amid the welter of innumerable changes, the same dialectical laws of motion force their way through as those which in history govern the apparent fortuitousness of events; the same

laws as those which similarly form the thread running through the history of the development of human thought and gradually rise to consciousness in the mind of man; the laws which Hegel first developed in all-embracing but mystic form, and which we made it one of our aims to strip of this mystic form and to bring clearly before the mind in their complete simplicity and universality. It goes without saying that the old natural philosophy—in spite of its real value and the many fruitful seeds it contained[1]—was unable to satisfy us. As is more fully

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[1] It is much easier, along with the unthinking mob *à la* Karl Vogt, to assail the old natural philosophy than to appreciate its historical significance. It contains a great deal of nonsense and fantasy, but not more than the unphilosophical theories of the empirical natural scientists contemporary with that philosophy, and that there was also in it much that was sensible and rational began to be perceived after the theory of evolution became wide-spread. Haeckel was therefore fully justified in recognizing the merits of Treviranus and Oken. In his primordial slime and primordial vesicle Oken put forward as a biological postulate what was in fact subsequently discovered as protoplasm and cell. As far as Hegel is specifically concerned, he is in many respects head and shoulders above his empiricist contemporaries, who thought that they had explained all unexplained phenomena when they had endowed them with some force or power—the force of gravity, the power of buoyancy, the power of electrical contact, etc.,—or where this would not do, with some unknown substance: the substance of light, of heat, of electricity, etc. The imaginary substances have now been pretty well discarded, but the power humbug against which Hegel fought still pops up gaily, for example, as late as 1869 in Helmholtz's Innsbruck lecture (Helmholtz, *Populäre Vorlesungen*, 11. Heft, 1871, S. 190). In contrast to the deification of Newton which was handed down from the French of the eighteenth century, and the English heaping of honours and wealth on Newton, Hegel brought out the fact that Kepler, whom Germany allowed to starve, was the real founder of the modern mechanics of the celestial bodies, and that the Newtonian law of gravitation was already contained in all three of Kepler's laws, in the third law even explicitly. What Hegel proves by a few simple equations in his *Naturphilosophie*, § 270 and

brought out in this book, natural philosophy, particularly in the Hegelian form, erred because it did not concede to nature any development in time, any "succession," but only "co-existence." This was on the one hand grounded in the Hegelian system itself, which ascribed historical evolution only to the "spirit," but on the other hand was also due to the whole state of the natural sciences in that period. In this Hegel fell far behind Kant, whose nebular theory had already indicated the origin of the solar system, and whose discovery of the retardation of the earth's rotation by the tides also had proclaimed the doom of that system. And finally, to me there could be no question of building the laws of dialectics into nature, but of discovering them in it and evolving them from it.

But to do this systematically and in each separate department is a gigantic task. Not only is the domain to be mastered almost limitless; natural science in this entire domain is itself undergoing such a mighty process of being revolutionized that even people who can devote the whole of their spare time to it can hardly keep pace. Since Karl Marx's death, however, my time has been requisitioned for more urgent duties, and I have therefore been compelled to lay aside my work. For the present I must content myself with the indications given in this book, and must wait to find some later opportunity to put together and publish the results which I have

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Addenda (Hegels *Werke*, 1842, VII. Band, Seiten 98 und 113 bis 115), appears again as the outcome of the most recent mathematical mechanics in Gustav Kirchhoff's *Vorlesungen über mathematische Physik*, 2. Auflage, Leipzig, 1877, S. 10) and in essentially the same simple mathematical form as had first been developed by Hegel. The natural philosophers stand in the same relation to consciously dialectical natural science as the utopians to modern communism. [*Note by Engels.*]

arrived at, perhaps in conjunction with the extremely important mathematical manuscripts left by Marx.

Yet the advance of theoretical natural science may possibly make my work to a great extent or even altogether superfluous. For the revolution which is being forced on theoretical natural science by the mere need to set in order the purely empirical discoveries, great masses of which have been piled up, is of such a kind that it must bring the dialectical character of natural processes more and more to the consciousness even of those empiricists who are most opposed to it. The old rigid antagonisms, the sharp, impassable dividing lines are more and more disappearing. Since even the last "true" gases have been liquefied, and since it has been proved that a body can be brought into a condition in which the liquid and the gaseous forms are indistinguishable, the aggregate states have lost the last relics of their former absolute character. With the thesis of the kinetic theory of gases, that in perfect gases at equal temperatures the squares of the speeds with which the individual gas molecules move are in inverse ratio to their molecular weights, heat also takes its place directly among the forms of motion which can be immediately measured as such. Whereas only ten years ago the great basic law of motion, then recently discovered, was as yet conceived merely as a law of the *conservation* of energy, as the mere expression of the indestructibility and uncreatability of motion, that is, merely in its quantitative aspect, this narrow, negative conception is being more and more supplanted by the positive idea of the *transformation* of energy, in which for the first time the qualitative content of the process comes into its own, and the last vestige of an extramundane creator is obliterated. That the quantity of motion (so-called energy) remains unaltered when it is transformed from kinetic energy (so-called

mechanical force) into electricity, heat, potential energy, etc., and vice versa, no longer needs to be preached as something new; it serves as the already secured basis for the now much more pregnant investigation into the very process of transformation, the great basic process, knowledge of which comprises all knowledge of nature. And since biology has been pursued in the light of the theory of evolution, one rigid boundary line of classification after another has been swept away in the domain of organic nature. The almost unclassifiable intermediate links are growing daily more numerous, closer investigation throws organisms out of one class into another, and distinguishing characteristics which almost became articles of faith are losing their absolute validity; we now have mammals that lay eggs, and, if the report is confirmed, also birds that walk on all fours. Years ago Virchow was compelled, following on the discovery of the cell, to dissolve the unity of the individual animal being into a federation of cell-states—thus acting more progressively[1] rather than scientifically and dialectically—and now the conception of animal (therefore also human) individuality is becoming far more complex owing to the discovery of the white blood corpuscles which creep about amoeba-like within the bodies of the higher animals. It is however precisely the polar antagonisms put forward as irreconcilable and insoluble, the forcibly fixed lines of demarcation and class distinctions, which have given modern theoretical natural science its restricted, metaphysical character. The recognition that these antagonisms and distinctions, though to be found in nature, are only of relative validity, and that on the other hand their imagined rigidity and absolute validity have been

[1] Allusion to Virchow's membership in the liberal "Progressive" Party.—*Ed.*

introduced into nature only by our reflective minds—this recognition is the kernel of the dialectical conception of nature. It is possible to arrive at this recognition because the accumulating facts of natural science compel us to do so; but one arrives at it more easily if one approaches the dialectical character of these facts equipped with an understanding of the laws of dialectical thought. In any case natural science has now advanced so far that it can no longer escape dialectical generalization. However it will make this process easier for itself if it does not lose sight of the fact that the results in which its experiences are summarized are concepts, that the art of working with concepts is not inborn and also is not given with ordinary everyday consciousness but requires real thought, and that this thought similarly has a long empirical history, not more and not less than empirical natural science. Only by learning to assimilate the results of the development of philosophy during the past two and a half thousand years will it rid itself on the one hand of any natural philosophy standing apart from it, outside it and above it, and on the other hand also of its own limited method of thought, which was its inheritance from English empiricism.

London, September 23, 1885

III

The following new edition is a reprint of the former, except for a few very unimportant stylistic changes. It is only in one chapter—the tenth of Part II: "From the *Critical History*"—that I have allowed myself to make substantial additions, on the following grounds.

As already stated in the preface to the second edition, this chapter was in all essentials the work of Marx.

I was forced to make considerable cuts in Marx's manuscript, which in its first wording had been intended as an article for a journal; and I had to cut precisely those parts of it in which the critique of Dühring's propositions was overshadowed by Marx's own developments regarding the history of economics. But this is just the section of the manuscript which is even today of the greatest and most permanent interest. I consider myself under an obligation to give in as full and faithful a form as possible the passages in which Marx assigns to people like Petty, North, Locke and Hume their appropriate place in the genesis of classical political economy; and even more his explanation of Quesnay's *Economic Tableau*, which has remained an insoluble riddle of the sphinx to all modern political economy. On the other hand, wherever the thread of the argument makes this possible, I have omitted passages which refer exclusively to Herr Dühring's writings.

For the rest I may well be perfectly satisfied with the degree to which, since the previous edition of this book was issued, the views maintained in it have penetrated into the social consciousness of scientific circles and of the working class in every civilized country of the world.

F. Engels

London, May 23, 1894

INTRODUCTION

I

GENERAL

Modern socialism is, in its essence, the direct product of the recognition, on the one hand, of the class antagonisms existing in the society of today between proprietors and non-proprietors, between capitalists and wage-workers; on the other hand, of the anarchy existing in production. But, in its theoretical form, modern socialism originally appears ostensibly as a more logical extension of the principles laid down by the great French philosophers of the eighteenth century.[1] Like every new theory, modern socialism had, at first, to connect itself with the intellectual stock-in-trade ready to its hand, however deeply its roots lay in [material] economic facts.

The great men, who in France prepared men's minds for the coming revolution, were themselves extreme revolutionists. They recognized no external authority of any kind whatever. Religion, natural science, society, political institutions—everything was subjected to the most

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[1] In a rough outline of the "Introduction" the above passage was formulated as follows: "*Modern socialism*, although it arose essentially from the perception of the class antagonisms existing in the society found at hand between proprietors and non-proprietors, workers and exploiters, appears however in its theoretical form at first as a more consistent and further extension of the principles laid down by the great French philosophers of the eighteenth century, socialism's first representatives, Morelly and Mably, having also belonged to them."—*Ed.*

unsparing criticism: everything must justify its existence before the judgment-seat of reason or give up existence. Reason became the sole measure of everything. It was the time when, as Hegel says, the world stood upon its head[1]; first in the sense that the human head, and the principles arrived at by its thought, claimed to be the basis of all human action and association; but by and by, also, in the wider sense that the reality which was in contradiction to these principles had, in fact, to be turned upside down. Every form of society and government then existing, every old traditional notion was flung into the lumber-room as irrational; the world had hitherto allowed itself to be led solely by prejudices; everything in the past deserved only pity and contempt. Now, for the first time, appeared the light of day, [the kingdom of reason]; henceforth superstition, injustice, privilege, oppression, were to be superseded by eternal truth, eternal Right, equality based on nature and the inalienable rights of man.

[1] [This is the passage on the French Revolution: "Thought, the concept of law, *all at once* made itself felt, and against this the old scaffolding of wrong could make no stand. In this conception of law, therefore, a constitution has now been established, and henceforth everything must be based upon this. Since the sun had been in the firmament, and the planets circled round him, the sight had never been seen of man standing upon his head—i.e., on the Idea —and building reality after this image. Anaxagoras first said that the Nous, reason, rules the world; but now, for the first time, had man come to recognize that the Idea must rule the mental reality. And this was *a magnificent sunrise. All thinking Beings have participated in celebrating this holy day. A sublime emotion* swayed men at that time, *an enthusiasm of reason pervaded the world,* as if now had come the reconciliation of the Divine Principle with the world" (Hegel, *Philosophie der Geschichte*, 1840, S. 535). Is it not high time to set the Anti-Socialist Law in action against such teachings, subversive and to the common danger, by the late Professor Hegel?] [*Note by Engels.*]

We know today that this kingdom of reason was nothing more than the idealized kingdom of the bourgeoisie; that this eternal Right found its realization in bourgeois justice; that this equality reduced itself to bourgeois equality before the law; that bourgeois property was proclaimed as one of the essential rights of man; and that the government of reason, the Contrat Social of Rousseau, came into being, and only could come into being, as a democratic bourgeois republic. The great thinkers of the eighteenth century could, no more than their predecessors, go beyond the limits imposed upon them by their epoch.

But, side by side with the antagonism of the feudal nobility and the burghers [who claimed to represent all the rest of society], was the general antagonism of exploiters and exploited, of rich idlers and poor workers. It was this very circumstance that made it possible for the representatives of the bourgeoisie to put themselves forward as representing not one special class, but the whole of suffering humanity. Still further. From its origin the bourgeoisie was saddled with its antithesis: capitalists cannot exist without wage-workers, and, in the same proportion as the mediaeval burgher of the guild developed into the modern bourgeois, the guild journeyman and the day-labourer, outside the guilds, developed into the proletarian. And although, upon the whole, the bourgeoisie, in their struggle with the nobility, could claim to represent at the same time the interests of the different working classes of that period, yet in every great bourgeois movement there were independent outbursts of that class which was the forerunner, more or less developed, of the modern proletariat. For example, at the time of the German Reformation and the Peasants' War, [the Anabaptists and] Thomas Münzer; in the great

English Revolution, the Levellers; in the great French Revolution, Babeuf.

There were theoretical enunciations corresponding with these revolutionary uprisings of a class not yet developed; in the sixteenth and seventeenth centuries, utopian pictures of ideal social conditions[1]; in the eighteenth, actual communistic theories (Morelly and Mably). The demand for equality was no longer limited to political rights; it was extended also to the social conditions of individuals. It was not simply class privileges that were to be abolished, but class distinctions themselves. A communism, ascetic [denouncing all the pleasures of life], Spartan, was the first form of the new teaching. Then came the three great utopians: Saint-Simon, to whom the middle-class movement, side by side with the proletarian, still had a certain significance; Fourier; and Owen, who in the country where capitalist production was most developed, and under the influence of the antagonisms begotten of this, worked out his proposals for the removal of class distinction systematically and in direct relation to French materialism.

One thing is common to all three. Not one of them appears as a representative of the interests of that proletariat which historical development had, in the meantime, produced. Like the French philosophers, they do not claim to emancipate a particular class [to begin with], but all humanity [at once]. Like them, they wish to bring in the kingdom of reason and eternal justice, but this kingdom, as they see it, is as far as heaven from earth, from that of the French philosophers.

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[1] Engels refers here to the works of the Utopian Communists Thomas More (sixteenth century) and Tommaso Campanella (seventeenth century).—*Ed.*

For [,to our three social reformers,] the bourgeois world, based upon the principles of these philosophers, is quite as irrational and unjust, and, therefore, finds its way to the dust-hole quite as readily as feudalism and all the earlier stages of society. If pure reason and justice have not, hitherto, ruled the world, this has been the case only because men have not rightly understood them. What was wanted was the individual man of genius, who has now arisen and who understands the truth. That he has now arisen, that the truth has now been clearly understood, is not an inevitable event, following of necessity in the chain of historical development, but a mere happy accident. He might just as well have been born 500 years earlier, and might then have spared humanity 500 years of error, strife, and suffering.

This mode of outlook is essentially that of all English and French and of the first German Socialists, including Weitling.[1] [To all these] socialism is the expression of absolute truth, reason and justice and needs only to be discovered to conquer all the world by virtue of its own power. And as absolute truth is independent of time, space, and of the historical development of man, it is a mere accident when and where it is discovered. With all this, absolute truth, reason, and justice are different with the founder of each different school. And as each one's special kind of absolute truth, reason, and justice is again conditioned by his subjective understanding, his conditions of existence, the measure of his knowledge and his intellectual training, there is no other ending possible in

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[1] In *Socialism: Utopian and Scientific*, this idea is set forth as follows: "The utopians' mode of thought has for a long time governed the socialist ideas of the nineteenth century, and still governs some of them. Until very recently all French and English Socialists did homage to it. The earlier German communism, including that of Weitling, was of the same school.—*Ed.*

this conflict of absolute truths than that they shall be mutually exclusive one of the other. Hence, from this nothing could come but a kind of eclectic, average socialism, which, as a matter of fact, has up to the present time dominated the minds of most of the socialist workers in France and England. Hence, a mish-mash allowing of the most manifold shades of opinion; a mish-mash of less striking critical statements, economic theories, pictures of future society by the founders of different sects[1]; a mish-mash which is the more easily brewed the more the definite sharp edges of the individual constituents are rubbed down in the stream of debate, like rounded pebbles in a brook.

To make a science of socialism, it had first to be placed upon a real basis.

In the meantime, along with and after the French philosophy of the eighteenth century had arisen the new German philosophy, culminating in Hegel. Its greatest merit was the taking up again of dialectics as the highest form of reasoning. The old Greek philosophers were all born natural dialecticians, and Aristotle, the most encyclopaedic intellect of them, had already analyzed the most essential forms of dialectic thought.[2] The newer philosophy, on the other hand, although in it also dialectics had brilliant exponents (e.g., Descartes and Spinoza), had, especially through English influence, become more and more rigidly fixed in the so-called metaphysical

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[1] In *Socialism: Utopian and Scientific* this sentence reads as follows: "... a mish-mash of such critical statements, economic theories, pictures of future society by the founders of different sects, as excite a minimum of opposition; ..."—*Ed.*

[2] The rough draft of the "Introduction" formulated this passage as follows: "The old Greek philosophers were all born natural dialecticians, and Aristotle, the Hegel of the ancient world, already analyzed the most essential forms of dialectic thought."—*Ed.*

mode of reasoning, by which also the French of the eighteenth century were almost wholly dominated, at all events in their special philosophical work. Outside philosophy in the restricted sense, the French nevertheless produced masterpieces of dialectic. We need only call to mind Diderot's *Le Neveu de Rameau*[1] and Rousseau's *Discours sur l'origine et les fondements de l'inégalité parmi les hommes*.[2] We give here, in brief, the essential character of these two modes of thought. We shall have to return to them later in greater detail.

When we consider and reflect upon nature at large or the history of mankind or our own intellectual activity, at first we see the picture of an endless entanglement of relations and reactions, permutations and combinations, in which nothing remains what, where and as it was, but everything moves, changes, comes into being and passes away. [We see, therefore, at first the picture as a whole, with its individual parts still more or less kept in the background; we observe the movements, transitions, connections, rather than the things that move, combine and are connected.] This primitive, naive but intrinsically correct conception of the world is that of ancient Greek philosophy, and was first clearly formulated by Heraclitus: everything is and is not, for everything *is fluid*, is constantly changing, constantly coming into being and passing away.

But this conception, correctly as it expresses the general character of the picture of appearances as a whole, does not suffice to explain the details of which this picture is made up, and so long as we do not understand these, we have not a clear idea of the whole picture. In

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[1] *Rameau's Nephew.—Ed.*

[2] *Discourse on the Origin and Foundations of Inequality among Men.—Ed.*

order to understand these details we must detach them from their natural or historical connection and examine each one separately, its nature, special causes, effects, etc. This is, primarily, the task of natural science and historical research: branches of science which the Greeks of classical times, on very good grounds, relegated to a subordinate position, because they had first of all to collect materials [for these sciences to work upon]. [A certain amount of natural and historical material must be collected before there can be any critical analysis, comparison, and arrangement in classes, orders, and species.] The foundations of the exact natural sciences were [,therefore,] first worked out by the Greeks of the Alexandrian period, and later on, in the Middle Ages, by the Arabs. Real natural science dates from the second half of the fifteenth century, and thence onward it had advanced with constantly increasing rapidity. The analysis of nature into its individual parts, the grouping of the different natural processes and objects in definite classes, the study of the internal anatomy of organic bodies in their manifold forms—these were the fundamental conditions of the gigantic strides in our knowledge of nature that have been made during the last four hundred years. But this method of work has also left us as legacy the habit of observing natural objects and processes in isolation, apart from their connection with the vast whole; of observing them in repose, not in motion; as constants, not as essentially variables; in their death, not in their life. And when this way of looking at things was transferred by Bacon and Locke from natural science to philosophy, it begot the narrow, metaphysical mode of thought peculiar to the last century.

To the metaphysician, things and their mental reflexes, ideas, are isolated, are to be considered one after the other and apart from each other, are objects of investi-

gation fixed, rigid, given once for all. He thinks in absolutely irreconcilable antitheses. "His communication is 'yea, yea; nay, nay'; for whatsoever is more than these cometh of evil." For him a thing either exists or does not exist; a thing cannot at the same time be itself and something else. Positive and negative absolutely exclude one another; cause and effect stand in a rigid antithesis one to the other.

At first sight this mode of thinking seems to us very luminous, because it is that of so-called sound common sense. Only sound common sense, respectable fellow that he is, in the homely realm of his own four walls, has very wonderful adventures directly he ventures out into the wide world of research. And the metaphysical mode of thought, justifiable and necessary as it is in a number of domains whose extent varies according to the nature of the particular object of investigation, sooner or later reaches a limit, beyond which it becomes one-sided, restricted, abstract, lost in insoluble contradictions. In the contemplation of individual things, it forgets the connection between them; in the contemplation of their existence, it forgets the beginning and end of that existence; of their repose, it forgets their motion. It cannot see the wood for the trees. For everyday purposes we know and can say, e.g., whether an animal is alive or not. But, upon closer inquiry, we find that this is, in many cases, a very complex question, as the jurists know very well. They have cudgelled their brains in vain to discover a rational limit beyond which the killing of the child in its mother's womb is murder. It is just as impossible to determine absolutely the moment of death, for physiology proves that death is not an instantaneous, momentary phenomenon, but a very protracted process.

In like manner, every organic being is every moment the same and not the same; every moment it assimilates

matter supplied from without, and gets rid of other matter; every moment some cells of its body die and others build themselves anew; in a longer or shorter time the matter of its body is completely renewed, and is replaced by other molecules of matter, so that every organic being is always itself, and yet something other than itself.

Further, we find upon closer investigation that the two poles of an antithesis, positive and negative, e.g., are as inseparable as they are opposed, and that despite all their opposition, they mutually interpenetrate. And we find, in like manner, that cause and effect are conceptions which only hold good in their application to individual cases; but as soon as we consider the individual cases in their general connection with the universe as a whole, they run into each other, and they become confounded when we contemplate that universal action and reaction in which causes and effects are eternally changing places, so that what is effect here and now will be cause there and then, and vice versa.

None of these processes and modes of thought enters into the framework of metaphysical reasoning. Dialectics, on the other hand, comprehends things and their representations, in their essential connection, concatenation, motion, origin, and ending. Such processes as those mentioned above are, therefore, so many corroborations of its own method of procedure.

Nature is the proof of dialectics, and it must be said for modern science that it has furnished this proof with very rich materials increasing daily, and thus has shown that, in the last resort, nature works dialectically and not metaphysically; [that she does not move in the eternal oneness of a perpetually recurring circle, but goes through a real historical evolution. In this connection Darwin must be named before all others. He dealt the metaphysical conception of nature the heaviest blow by his proof

that all organic beings, plants, animals, and man himself, are the products of a process of evolution going on through millions of years]. But the naturalists who have learned to think dialectically are few and far between, and this conflict of the results of discovery with preconceived modes of thinking explains the endless confusion now reigning in theoretical natural science, the despair of teachers as well as learners, of authors and readers alike.

An exact representation of the universe, of its evolution, of the development of mankind, and of the reflection of this evolution in the minds of men, can therefore only be obtained by the methods of dialectics with its constant regard to the innumerable actions and reactions of life and death, of progressive or retrogressive changes. And in this spirit the new German philosophy has worked. Kant began his career by resolving the stable solar system of Newton and its eternal duration, after the famous initial impulse had once been given, into the result of a historic process, the formation of the sun and all the planets out of a rotating nebulous mass. From this he at the same time drew the conclusion that, given this origin of the solar system, its future death followed of necessity. His theory half a century later was established mathematically by Laplace, and half a century after that the spectroscope proved the existence in space of such incandescent masses of gas in various stages of condensation.

This new German philosophy culminated in the Hegelian system. In this system—and herein is its great merit—for the first time the whole world, natural, historical, intellectual, is represented as a process, i.e., as in constant motion, change, transformation, development; and the attempt is made to trace out the internal connection that makes a continuous whole of all this movement

and development.[1] From this point of view the history of mankind no longer appeared as a wild whirl of senseless deeds of violence, all equally condemnable at the judgment-seat of mature philosophic reason and which are best forgotten as quickly as possible, but as the process of evolution of man himself. It was now the task of the intellect to follow the gradual march of this process through all its devious ways, and to trace out the inner law running through all its apparently accidental phenomena.

That [the] Hegel [ian system] did not solve the problem [it propounded] is here immaterial. Its epoch-making merit was that it propounded the problem. This problem is one that no single individual will ever be able to solve. Although Hegel was—with Saint-Simon—the most encyclopaedic mind of his time, yet he was limited, first, by the necessarily limited extent of his own knowledge and, second, by the limited extent and depth of the knowledge and conceptions of his age. To these limits a third must be added. Hegel was an idealist. To him the thoughts within his brain were not the more or less abstract pictures of actual things and processes, but, conversely, things and their evolution were only the realized pictures of the "Idea," existing somewhere from eternity before

[1] In the rough draft of the "Introduction" Hegelian philosophy is described in the following terms: "The Hegelian system was the last and most consummate form of philosophy, in so far as the latter is represented as a special science superior to every other. All philosophy collapsed with this system. But there has remained the dialectic method of thinking and the conception that the natural, historical and intellectual world moves and transforms itself endlessly in a constant process of becoming and passing away. Not only philosophy but *all* sciences were now required to discover the laws of motion of this constant process of transformation, each in its particular domain. And this was the legacy which Hegelian philosophy bequeathed to its successors."—*Ed.*

the world was. This way of thinking turned everything upside down, and completely reversed the actual connection of things in the world. Correctly and ingeniously as many individual groups of facts were grasped by Hegel, yet, for the reasons just given, there is much that is botched, artificial, laboured, in a word, wrong in point of detail. The Hegelian system, in itself, was a colossal miscarriage—but it was also the last of its kind. It was suffering, in fact, from an internal and incurable contradiction. Upon the one hand, its essential proposition was the conception that human history is a process of evolution, which, by its very nature, cannot find its intellectual final term in the discovery of any so-called absolute truth. But, on the other hand, it laid claim to being the very essence of this absolute truth. A system of natural and historical knowledge, embracing everything, and final for all time, is a contradiction to the fundamental law of dialectic reasoning. This law, indeed, by no means excludes, but, on the contrary, includes the idea that the systematic knowledge of the external universe can make giant strides from age to age.

The perception of the fundamental contradiction in German idealism led necessarily back to materialism, but, *nota bene*, not to the simply metaphysical, exclusively mechanical materialism of the eighteenth century. In contrast to the naively revolutionary, simple rejection of all previous history, modern materialism sees in the latter the process of evolution of humanity, it being its task to discover the laws of motion thereof.[1] With the French of the eighteenth century, and [even] with Hegel, the con-

[1] In *Socialism: Utopian and Scientific* this passage reads as follows: "Old materialism looked upon all previous history as a crude heap of irrationality and violence; modern materialism sees in it the process of evolution of humanity, and aims at discovering the laws thereof."—*Ed.*

ception obtained of nature as a whole, moving in narrow circles, and [for ever] immutable, with its eternal celestial bodies, as Newton, and unalterable organic species, as Linnaeus, taught. Modern materialism embraces the more recent discoveries of natural science, according to which nature also has its history in time, the celestial bodies, like the organic species that, under favourable conditions, people them, being born and perishing. And even if nature, as a whole, must still be said to move in recurrent cycles, these cycles assume infinitely larger dimensions. In both cases modern materialism is essentially dialectic, and no longer needs any philosophy standing above the other sciences.[1] As soon as each special science is bound to make clear its position in the great totality of things and of our knowledge of things, a special science dealing with this totality is superfluous [or unnecessary]. That which still survives, independently, of all earlier philosophy is the science of thought and its laws—formal logic and dialectics. Everything else is subsumed in the positive science of nature and history.

Whilst, however, the revolution in the conception of nature could only be made in proportion to the corresponding positive materials furnished by research, already much earlier certain historical facts had occurred which led to a decisive change in the conception of history. In 1831, the first working-class rising took place in Lyons; between 1838 and 1842, the first national working-class movement, that of the English Chartists, reached its height. The class struggle between proletariat and bourgeoisie came to the front in the history of the most

[1] In *Socialism: Utopian and Scientific* this sentence reads as follows: "In both aspects, modern materialism is essentially dialectic, and no longer requires the assistance of that sort of philosophy which, queen-like, pretended to rule the remaining mob of sciences."—*Ed.*

advanced countries in Europe, in proportion to the development, upon the one hand, of modern industry, upon the other, of the newly-acquired political supremacy of the bourgeoisie. Facts more and more strenuously gave the lie to the teachings of bourgeois economy as to the identity of the interests of capital and labour, as to the universal harmony and universal prosperity that would be the consequence of unbridled competition.[1] All these things could no longer be ignored, any more than the French and English socialism, which was their theoretical, though very imperfect, expression. But the old idealist conception of history, which was not yet dislodged, knew nothing of class struggles based upon economic interests, knew nothing of economic interests; production and all economic relations appeared in it only as incidental, subordinate elements in the "history of civilization."

The new facts made imperative a new examination of all past history. Then it was seen that *all* past history [,with the exception of its primitive stages,] was the history of class struggles; that these warring classes of society are always the products of the modes of production and of exchange—in a word, of the *economic* conditions of their time; that the economic structure of society always furnishes the real basis, starting from which we can alone work out the ultimate explanation

[1] The rough draft of the "Introduction" contains here the following addition: "In France the Lyons insurrection of 1835 [1834] had likewise proclaimed the struggle of the proletariat against the bourgeoisie. The English and French socialist theories acquired historic importance and were bound to have their repercussion and criticism in Germany as well, although industry there was only just beginning to climb out of the stage of small-scale production. The theoretical socialism that now took shape, rather among Germans than in Germany, had therefore to import all its material. . . ."—*Ed.*

of the whole superstructure of juridical and political institutions as well as of the religious, philosophical, and other ideas of a given historical period. [Hegel had freed history from metaphysics—he had made it dialectic; but his conception of history was essentially idealistic.] But now idealism was driven from its last refuge, the philosophy of history; now a materialistic treatment of history was propounded, and a method found of explaining man's "knowing" by his "being," instead of, as heretofore, his "being" by his "knowing."

[From that time forward socialism was no longer an accidental discovery of this or that ingenious brain, but the necessary outcome of the struggle between two historically developed classes—the proletariat and the bourgeoisie. Its task was no longer to manufacture a system of society as perfect as possible, but to examine the historico-economic succession of events from which these classes and their antagonism had of necessity sprung, and to discover in the economic conditions thus created the means of ending the conflict.] But the socialism of earlier days was as incompatible with this materialistic conception as the conception of nature of the French materialists was with dialectics and modern natural science. The socialism of earlier days certainly criticized the existing capitalistic mode of production and its consequences. But it could not explain them, and, therefore, could not get the mastery of them. It could only simply reject them as bad. [The more strongly this earlier socialism denounced the exploitation of the working class, inevitable under capitalism, the less able was it clearly to show in what this exploitation consisted and how it arose.] But for this it was necessary—(1) to present the capitalistic method of production in its historical connection and its inevitableness during a particular historical period, and therefore, also, to present its inevitable

downfall; and (2) to lay bare its essential character, which was still a secret, as its critics had hitherto attacked its evil consequences rather than the process of the thing itself. This was done by the discovery of *surplus-value*. It was shown that the appropriation of unpaid labour is the basis of the capitalist mode of production and of the exploitation of the worker that occurs under it; that even if the capitalist buys the labour-power of his labourer at its full value as a commodity on the market, he yet extracts more value from it than he paid for; and that in the ultimate analysis this surplus-value forms those sums of value from which are heaped up the constantly increasing masses of capital in the hands of the possessing classes. The genesis of capitalist production and the production of capital were both explained.

These two great discoveries, the materialistic conception of history and the revelation of the secret of capitalistic production through surplus-value, we owe to *Marx*. With these discoveries socialism became a science. The next thing was to work out all its details [and relations].

This, approximately, was how things stood in the fields of theoretical socialism and extinct philosophy, when Herr Eugen Dühring, not without considerable din, sprang on to the stage and announced that he had accomplished a complete revolution in philosophy, political economy and socialism.

Let us see what Herr Dühring promises us and how he fulfils his promises.

II

WHAT HERR DÜHRING PROMISES

The writings of Herr Dühring with which we are here primarily concerned are his *Kursus der Philosophie*,[1] his *Kursus der National- und Sozialökonomie*,[2] and his *Kritische Geschichte der Nationalökonomie und des Sozialismus*.[3] The first-named work is the one which particularly claims our attention here.

On the very first page Herr Dühring introduces himself as "the man who *claims to represent* this power (philosophy) in his age and for its immediately foreseeable development." He thus proclaims himself to be the only true philosopher of today and of the "foreseeable" future. Whoever departs from him departs from truth. Many people, even before Herr Dühring, have *thought* something of this kind about themselves, but—except for Richard Wagner—he is probably the first who has calmly blurted it out. And the truth to which he refers is "a final and ultimate truth."

Herr Dühring's philosophy is "the *natural* system or the *philosophy of reality*.... In it reality is so conceived as to *exclude any tendency* to a visionary and subjectively limited conception of the world." This philosophy is therefore of such a nature that it lifts Herr Dühring above

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[1] *Course of Philosophy*, 1875.—*Ed.*

[2] *Course of Political and Social Economy*, 1876.—*Ed.*

[3] *Critical History of Political Economy and Socialism*, 1875.—*Ed.*

the limits he himself can hardly deny of his personal, subjective limitations. And this is in fact necessary if he is to be in a position to lay down final and ultimate truths, although so far we do not see how this miracle should come to pass.

This "natural system of knowledge which in itself is of value to the mind" has, "without the slightest detraction from the profundity of thought, *securely established* the basic forms of being." From its "really critical standpoint" it provides "the elements of a philosophy which is real and therefore directed to the reality of nature and of life, a philosophy which cannot allow the validity of any merely apparent horizon, but *in its powerfully revolutionizing movement unfolds all earths and heavens of outer and inner nature.*" It is a "new mode of thought," and its results are "from the ground up original conclusions and views ... system-creating ideas ... established truths." In it we have before us "a work which must find its strength in concentrated initiative"—whatever that may mean; an "investigation *going to the roots* ... a *deep-rooted* science ... a *strictly scientific* conception of things and men ... an *all-round penetrating* work of thought ... a *creative* evolving of premises and conclusions controllable by thought ... the *absolutely fundamental.*" In the economic and political sphere he gives us not only "historical and systematically comprehensive works," of which the historical ones are, to boot, notable for "*my* historical depiction *in the grand style*," while those dealing with economics have brought about "creative turns"; but he even finishes with a fully worked-out socialist plan of his own for the society of the future, a plan which is the "practical fruit of a *clear* theory *going to the ultimate roots of things*" and, like the Dühring philosophy, is consequently infallible and offers the only way to salvation. For "*only in that* socialist structure which *I* have sketched

in my Course of Political and Social Economy can a true Own take the place of ownership which is merely apparent and transitory or even based on violence." And the future has to follow these directions.

This bouquet of glorifications of Herr Dühring by Herr Dühring could easily be enlarged tenfold. It may already have created some doubt in the mind of the reader as to whether it is really a philosopher with whom he is dealing, or a—but we must beg the reader to reserve judgment until he has got to know the above-mentioned "deep-rootedness" at closer quarters. We have given the above anthology only for the purpose of showing that we have before us not any ordinary philosopher and Socialist, who merely expresses his ideas and leaves it to the future to judge their worth, but quite an extraordinary creature, who claims to be not less infallible than the Pope, and whose doctrine is the only way to salvation and simply must be accepted by anyone who does not want to fall into the most abominable heresy. What we are here confronted with is certainly not one of those works in which all socialist literature, recently also German, has abounded—works in which people of various calibres, in the most straightforward way in the world, try to clear up in their minds problems for the solution of which they may be more or less short of material; works in which, whatever their scientific and literary shortcomings, the socialist good will is always deserving of recognition. On the contrary, Herr Dühring offers us principles which he declares are final and ultimate truths and therefore any views conflicting with these are false from the outset; he is in possession not only of the exclusive truth but also of the sole strictly scientific method of investigation, in contrast with which all others are unscientific. Either he is right—and in this case we have before us the greatest genius of all time, the first superhuman, because

infallible, human. Or he is wrong, and in that case, whatever our judgment may be, benevolent consideration shown for any good intentions he may possibly have had would nevertheless be the most deadly insult to Herr Dühring.

When a man is in possession of the final and ultimate truth and of the only strictly scientific method, it is only natural that he should have a certain contempt for the rest of erring and unscientific humanity. We must therefore not be surprised that Herr Dühring should speak of his predecessors with extreme disdain, and that there are only a few great men, thus styled by way of exception by him himself, who find mercy at the bar of his "deep-rootedness."

Let us hear first what he has to say about the philosophers: "*Leibnitz*, devoid of any nobler sentiments ... that best of all court-philosophizers." *Kant* is still just about tolerated; but after him everything got into a muddle: there followed the "wild ravings and equally childish and windy stupidities of the immediately succeeding epigoni, namely, a *Fichte* and a *Schelling* ... monstrous caricatures of ignorant natural philosophizing ... the post-Kantian monstrosities" and "the delirious fantasies" crowned by "a *Hegel*." The lastnamed used a "Hegel jargon" and spread the "Hegel pestilence" by means of his "moreover even in form unscientific demeanour" and his "crudities."

The natural scientists fare no better, but as only Darwin is cited by name we must confine ourselves to him: "Darwinian semi-poetry and dexterity in metamorphosis, with their coarsely sentient narrowness of comprehension and blunted power of differentiation.... In our view what is specific to Darwinism, from which of course the Lamarckian formulations must be excluded, is *a piece of brutality directed against humanity*."

But the Socialists come off worst of all. With the exception at any rate of Louis Blanc—the most insignificant of them all—they are all and sundry sinners and fall short of the reputation which they should have before (or behind) Herr Dühring. And not only in regard to truth and scientific method—no, also in regard to their character. Except for Babeuf and a few Communards of 1871 none of them are "men." The three utopians are called "social alchemists." As to them, a certain indulgence is shown to Saint-Simon, in so far as he is merely charged with "exaltation of mind," and there is a compassionate suggestion that he suffered from religious mania. With Fourier, however, Herr Dühring completely loses patience. For Fourier "revealed every element of insanity . . . ideas which one would normally have most expected to find in madhouses . . . the wildest dreams . . . products of delirium. . . . The unspeakably silly Fourier," this "infantile mind," this "idiot," is withal not even a Socialist; his phalanstery is absolutely not a piece of rational socialism, but "a caricature constructed on the pattern of everyday commerce." And finally: "Anyone who does not find those effusions (of Fourier's, concerning Newton) . . . sufficient to convince himself that in Fourier's name and in the whole of Fourierism it is only the first syllable (*fou*—crazy) that has any truth in it, *should himself be classed under some category of idiots.*" Finally, Robert Owen "had feeble and paltry ideas . . . his reasoning, so crude in its ethics . . . a few commonplaces which degenerated into perversions . . . nonsensical and crude way of looking at things. . . . The course of Owen's ideas is hardly worth subjecting to more serious criticism . . . his vanity"—and so on. With extreme wit Herr Dühring characterizes the utopians by reference to their names, as follows: Saint-Simon—*saint* (holy); Fourier—*fou* (crazy); Enfantin—*enfant* (childish); he only needs to

add: Owen—o woe! and a very important period in the history of socialism has in four words been roundly condemned; and anyone who has any doubts about it "should himself be classed under some category of idiots."

As for Dühring's opinion of the later Socialists, we shall, for the sake of brevity, cite him only on Lassalle and Marx:

Lassalle: "Pedantic, hair-splitting efforts to popularize ... rampant scholasticism ... a monstrous hash of general theories and paltry trash ... Hegel-superstition, senseless and formless ... a horrifying example ... peculiarly limited ... pompous display of the most paltry trifles ... our Jewish hero ... pamphleteer ... common ... inherent instability in his view of life and of the world."

Marx: "Narrowness of conception ... his works and achievements in and by themselves, that is, regarded from a purely theoretical standpoint, are without any permanent significance in our domain (the critical history of socialism), and in the general history of intellectual tendencies they are to be cited at most as symptoms of the influence of one branch of modern sectarian scholastics ... impotence of the faculties of concentration and systematization ... deformity of thought and style, undignified affectation of language ... Anglicized vanity ... duping ... barren conceptions which in fact are only bastards of historical and logical fantasy ... deceptive twisting ... personal vanity ... vile mannerisms ... snotty ... buffoonery pretending to be witty ... Chinese erudition ... philosophical and scientific backwardness."

And so on, and so forth—for this is only a small superficially culled bouquet out of the Dühring rose garden. It must be understood that, at the moment, we are not in the least concerned whether these amiable expressions of abuse—which, if he had any education, should forbid

Herr Dühring from finding *anything* vile and snotty—are also final and ultimate truths. And—for the moment—we will guard against voicing any doubt as to their deep-rootedness, as we might otherwise be prohibited even from trying to find the category of idiots to which we belong. We only thought it was our duty to give, on the one hand, an example of what Herr Dühring calls "the select language of the considerate and, in the real sense of the word, moderate mode of expression"; and on the other hand, to make it clear that to Herr Dühring the worthlessness of his predecessors is a no less established fact than his own infallibility. Whereupon we sink to the ground in deepest reverence before the mightiest genius of all time—if that is how things really stand.

Part I

PHILOSOPHY

III

CLASSIFICATION. APRIORISM

Philosophy, according to Herr Dühring, is the development of the highest form of consciousness of the world and of life, and in a wider sense embraces the *principles* of all knowledge and volition. Wherever a series of cognitions or stimuli or a group of forms of being come to be examined by human consciousness, the *principles* underlying these manifestations of necessity become an object of philosophy. These principles are the simple, or until now assumed to be simple, constituents of manifold knowledge and volition. Like the chemical composition of bodies, the general constitution of things can be reduced to basic forms and basic elements. These ultimate constituents or principles, once they have been discovered, are valid not only for what is immediately known and accessible, but also for the world which is unknown and inaccessible to us. Philosophical principles consequently provide the final supplement required by the sciences in order to become a uniform system by which nature and human life can be explained. Apart from the fundamental forms of all existence, philosophy has only two specific subjects of investigation—nature and the world of man. Accordingly, our material arranges itself *quite naturally* into three groups, namely, the general scheme of the universe, the science of the principles of nature, and finally the science of mankind. This succession at the same time contains *an inner logical sequence*,

for the formal principles which are valid for all being take precedence, and the realms of the objects to which they are *to be applied* then follow in the degree of their subordination. So far Herr Dühring, and almost entirely word for word.

What he is dealing with are therefore *principles*, formal tenets derived from *thought* and not from the external world, which are to be applied to nature and the realm of man, and to which therefore nature and man have to conform. But whence does thought obtain these principles? From itself? No, for Herr Dühring himself says: the realm of pure thought is limited to logical schemata and mathematical forms (the latter, moreover, as we shall see, is wrong). Logical schemata can only relate to *forms of thought*; but what we are dealing with here is solely forms of *being*, of the external world, and these forms can never be created and derived by thought out of itself, but only from the external world. But with this the whole relationship is inverted: the principles are not the starting-point of the investigation, but its final result; they are not applied to nature and human history, but abstracted from them; it is not nature and the realm of humanity which conform to these principles, but the principles are only valid in so far as they are in conformity with nature and history. That is the only materialistic conception of the matter, and Herr Dühring's contrary conception is idealistic, makes things stand completely on their heads, and fashions the real world out of ideas, out of schemata, schemes or categories existing somewhere before the world, from eternity—just like *a Hegel.*

In fact, let us compare Hegel's *Encyclopaedia* and all its delirious fantasies with Herr Dühring's final and ultimate truths. With Herr Dühring we have in the first place general world schematism, which Hegel calls

Logic. Then with both of them we have the application of these schemata or logical categories to nature: the philosophy of nature; and finally their application to the realm of man, which Hegel calls the philosophy of mind. The "inner logical sequence" of the Dühring succession therefore leads us "quite naturally" back to Hegel's *Encyclopaedia*, from which it has been taken with a loyalty which would move that wandering Jew of the Hegelian school, Professor Michelet of Berlin, to tears.

That is what comes of accepting "consciousness," "thought," quite naturalistically, as something given, something opposed from the outset to being, to nature. If that were so, it must seem extremely strange that consciousness and nature, thinking and being, the laws of thought and the laws of nature, should correspond so closely. But if the further question is raised what thought and consciousness really are and where they come from, it becomes apparent that they are products of the human brain and that man himself is a product of nature, which has developed in and along with its environment; hence it is self-evident that the products of the human brain, being in the last analysis also products of nature, do not contradict the rest of nature's interconnections but are in correspondence with them.

But Herr Dühring cannot permit himself such a simple treatment of the subject. He thinks not only in the name of humanity—in itself no small achievement—but in the name of the conscious and reasoning beings on all celestial bodies. Indeed, it would be "a degradation of the basic forms of consciousness and knowledge to attempt to rule out or even to put under suspicion their sovereign validity and their unconditional claim to truth, by applying the epithet 'human' to them." Hence, in order that no suspicion may arise that on some celestial body or other twice two makes five, Herr Dühring dare not designate thought as

being human, and so he has to sever it from the only real foundation on which we find it, namely, man and nature; and with that he tumbles hopelessly into an ideology which reveals him as the epigone of the "epigone" Hegel. By the way, we shall often meet Herr Dühring again on other celestial bodies.

It goes without saying that no materialist doctrine can be founded on such an ideological basis. Later on we shall see that Herr Dühring is forced more than once to endow nature surreptitiously with conscious activity, with what in plain language is called God.

However, our realistic philosopher had also other motives for shifting the basis of all reality from the real world to the world of thought. The science of this general world schematism, of these formal principles of being, is precisely the foundation of Herr Dühring's philosophy. If we deduce world schematism not from our minds, but only *through* our minds from the real world, if we deduce principles of being from what is, we need no philosophy for this purpose, but positive knowledge of the world and of what happens in it; and what this yields is also not philosophy, but positive science. In that case, however, Herr Dühring's whole volume would be nothing but love's labour lost.

Further: if no philosophy as such is any longer required, then also there is no more need of any system, not even of any natural system of philosophy. The perception that all the processes of nature are systematically connected drives science on to prove this systematic connection throughout, both in general and in particular. But an adequate, exhaustive scientific exposition of this interconnection, the formation of an exact mental image of the world system in which we live, is impossible for us, and will always remain impossible. If at any time in the evolution of mankind such a final, conclusive system

of the interconnections within the world—physical as well as mental and historical—were brought about, this would mean that human knowledge had reached its limit, and, from the moment when society had been brought into accord with that system, further historical evolution would be cut short—which would be an absurd idea, sheer nonsense. Mankind therefore finds itself faced with a contradiction: on the one hand, it has to gain an exhaustive knowledge of the world system in all its interrelations; and on the other hand, because of the nature both of men and of the world system, this task can never be completely fulfilled. But this contradiction lies not only in the nature of the two factors—the world, and man—it is also the main lever of all intellectual advance, and finds its solution continuously, day by day, in the endless progressive evolution of humanity, just as for example mathematical problems find their solution in an infinite series or continued fractions. Each mental image of the world system is and remains in actual fact limited, objectively by the historical conditions and subjectively by the physical and mental constitution of its originator. But Herr Dühring explains in advance that his mode of reasoning is such that it excludes any tendency to a subjectively limited conception of the world. We saw above that he was omnipresent—on all possible celestial bodies. We now see that he is also omniscient. He has solved the ultimate problems of science and thus nailed boards across the future of all science.

As with the basic forms of being, so also with the whole of pure mathematics: Herr Dühring thinks that he can produce it *a priori*, that is, without making use of the experience offered us by the external world, can construct it in his head. In pure mathematics the mind deals "with its own free creations and imaginations"; the concepts of number and figure are "the adequate object of that pure

science which it can create of itself," and hence it has a "validity which is independent of *particular* experience and of the real content of the world."

That pure mathematics has a validity which is independent of the *particular* experience of each individual is, for that matter, correct, and this is true of all established facts in every science, and indeed of all facts whatsoever. The magnetic poles, the fact that water is composed of hydrogen and oxygen, the fact that Hegel is dead and Herr Dühring alive, hold good independently of my own experience or that of any other individuals, and even independently of Herr Dühring's experience, when he begins to sleep the sleep of the just. But it is not at all true that in pure mathematics the mind deals only with its own creations and imaginations. The concepts of number and figure have not been derived from any source other than the world of reality. The ten fingers on which men learnt to count, that is, to perform the first arithmetical operation, are anything but a free creation of the mind. Counting requires not only objects that can be counted, but also the ability to exclude all properties of the objects considered except their number—and this ability is the product of a long historical evolution based on experience. Like the idea of number, so the idea of figure is borrowed exclusively from the external world, and does not arise in the mind out of pure thought. There must have been things which had shape and whose shapes were compared before anyone could arrive at the idea of figure. Pure mathematics deals with the space forms and quantity relations of the real world—that is, with material which is very real indeed. The fact that this material appears in an extremely abstract form can only superficially conceal its origin from the external world. But in order to make it possible to investigate these forms and relations in their pure state, it is necessary to separate them

entirely from their content, to put the content aside as irrelevant; thus we get points without dimensions, lines without breadth and thickness, a and b and x and y, constants and variables; and only at the very end do we reach the free creations and imaginations of the mind itself, that is to say, imaginary magnitudes. Even the apparent derivation of mathematical magnitudes from each other does not prove their *a priori* origin, but only their rational connection. Before one came upon the idea of deducing the *form* of a cylinder from the rotation of a rectangle about one of its sides, a number of real rectangles and cylinders, however imperfect in form, must have been examined. Like all other sciences, mathematics arose out of the *needs* of men: from the measurement of land and the content of vessels, from the computation of time and from mechanics. But, as in every department of thought, at a certain stage of development the laws, which were abstracted from the real world, become divorced from the real world, and are set up against it as something independent, as laws coming from outside, to which the world has to conform. That is how things happened in society and in the state, and in this way, and not otherwise, *pure* mathematics was subsequently *applied* to the world, although it is borrowed from this same world and represents only one part of its forms of interconnection—and it is only *just because of this* that it can be applied at all.

But just as Herr Dühring imagines that, out of the axioms of mathematics, "which also in accordance with pure logic neither require nor are capable of substantiation," he can deduce the whole of pure mathematics without any kind of empirical admixture, and then apply it to the world, so he likewise imagines that he can, in the first place, produce out of his head the basic forms of being, the simple elements of all knowledge,

the axioms of philosophy, deduce from these the whole of philosophy or world schematism, and then, by sovereign decree, impose this constitution of his on nature and humanity. Unfortunately nature is not at all, and humanity only to an infinitesimal degree, composed of the Manteuffelite[1] Prussians of 1850.

Mathematical axioms are expressions of the scantiest thought-content, which mathematics is obliged to borrow from logic. They can be reduced to two.

1) The whole is greater than its part. This statement is pure tautology, as the quantitatively conceived idea "part" is from the outset definitely related to the idea "whole," and in fact in such a way that "part" simply means that the quantitative "whole" consists of several quantitative "parts." In stating this explicitly, the so-called axiom does not take us a step further. This tautology can even in a way *be proved* by saying: a whole is that which consists of several parts; a part is that of which several make a whole; hence the part is less than the whole—in which the inanity of repetition brings out even more clearly the inanity of content.

2) If two quantities are equal to a third, they are equal to each other. This statement, as Hegel has already shown, is a conclusion, the correctness of which is vouched for by logic, and which is therefore proved, although outside of pure mathematics. The remaining axioms relating to equality and inequality are merely logical extensions of this conclusion.

These meagre principles do not cut much ice, either in mathematics or anywhere else. In order to get any further, we are obliged to bring in real relations, rela-

[1] Allusion to the servile submissiveness of the Prussians, who in 1850 accepted the constitution in the drafting of which the reactionary minister Manteuffel had a share.—*Ed.*

tions and space forms which are taken from real bodies. The ideas of lines, planes, angles, polygons, cubes, spheres, etc., are all taken from reality, and it requires a pretty good portion of naive ideology to believe the mathematicians that the first line came into existence through the movement of a point in space, the first plane through the movement of a line, the first solid through the movement of a plane, and so on. Even language rebels against such a conception. A mathematical figure of three dimensions is called a solid body, *corpus solidum*, hence, in Latin, even a tangible object; it therefore has a name derived from sturdy reality and by no means from the free imagination of the mind.

But why all this prolixity? After Herr Dühring, on pages 42 and 43, has enthusiastically sung the independence of pure mathematics from the world of experience, its apriority, its preoccupation with the mind's own free creations and imaginations, he says on page 63: "It is, of course, easily overlooked that those mathematical elements (number, magnitude, time, space and geometric motion) *are ideal only in their form, . . . absolute magnitudes* are therefore something completely *empirical*, no matter to what species they belong," . . . but "mathematical schemata are capable of characterization which is adequate even though *divorced* from experience." The last statement is more or less true of *every* abstraction, but does not by any means prove that it is not abstracted from reality. In world schematism pure mathematics arose out of pure thought—in the philosophy of nature it is something completely empirical, taken from the external world and then divorced from it. Which are we to believe?

IV

WORLD SCHEMATISM

"All-embracing being is *one*. In its self-sufficiency it has nothing alongside it or over it. To associate a second being with it would be to make it something that it is not, namely, a part or constituent of a more comprehensive whole. Due to the fact that we extend our *unified* thought like a framework, nothing that should be comprised in this thought-*unity* can retain a duality within itself. Nor, again, can anything escape this thought-unity.... The essence of all thought consists in the union of elements of consciousness into a unity.... It is the point of unity of the synthesis whereby the *indivisible idea of the world* came into being and the universe, as the name itself implies, is apprehended as something in which everything is united into a *unity*."

Thus far Herr Dühring. This is the first application of the mathematical method: "Every question is to be decided *axiomatically* in accordance with simple basic forms, as if we were dealing with the simple ... principles of mathematics."

"All-embracing being is one." If tautology, the simple repetition in the predicate of what is already expressed in the subject—if that makes an axiom, then we have here one of the purest water. Herr Dühring tells us in the subject that being embraces everything, and in the predicate he intrepidly declares that in that case there is

nothing outside it. What colossal "system-creating thought"!

This is indeed system-creating! Within the space of the next six lines Herr Dühring has transformed the *oneness* of being, by means of our unified thought, into its *unity*. As the essence of all thought consists in bringing things together into a unity, so being, as soon as it is conceived, is conceived as unified, and the idea of the world as indivisible; and because *conceived* being, the *idea of the world*, is unified, therefore real being, the real world, is also an indivisible unity. And with that "there is no longer any room for things beyond, once the mind has learnt to conceive being in its homogeneous universality."

That is a campaign which puts Austerlitz and Jena, Königgrätz and Sedan completely in the shade. In a few sentences, hardly a page after we have mobilized the first axiom, we have already done away with, cast overboard, destroyed, everything beyond the world—God and the heavenly hosts, heaven, hell and purgatory, along with the immortality of the soul.

How do we get from the oneness of being to its unity? By the very fact of conceiving it. In so far as we spread our idea of unity around being like a frame, its oneness in thought becomes a unity, a thought-unity; for the essence of *all* thought consists in bringing together the elements of consciousness into a unity.

This last statement is simply untrue. In the first place, thought consists just as much in the taking apart of objects of consciousness into their elements as in the putting together of related elements into a unity. Without analysis, no synthesis. Secondly, without making blunders thought can bring together into a unity only those elements of consciousness in which or in whose real proto-

types this unity already *existed before*. If I include a shoebrush in the unity mammals, this does not help it to get mammary glands. The unity of being, or rather, the question whether its conception as a unity is justified, is therefore precisely what was to be proved; and when Herr Dühring assures us that he conceives being as a unity and not as twofold, he tells us nothing more than his own unauthoritative opinion.

If we try to state his process of thought in unalloyed form, we get the following: "I begin with being. I therefore think what being is. The thought of being is a unified thought. But thinking and being must be in agreement, they are in conformity with each other, they 'coincide.' Therefore being is a unity also in reality. Therefore there cannot be anything 'beyond.' " If Herr Dühring had spoken without disguise in this way, instead of treating us to the above oracular passages, his ideology would have been clearly visible. To attempt to prove the reality of any product of thought by the identity of thinking and being was indeed one of the most absurd delirious fantasies of—a Hegel.

Even if his whole method of proof had been correct, Herr Dühring would still not have won an inch of ground from the spiritualists. The latter would reply briefly: to us, too, the universe *is* simple; the division into this world and the world beyond exists only for our specifically earthly, original-sin standpoint; in and for itself, that is, in God, all being is a unity. And they would accompany Herr Dühring to his other beloved celestial bodies and show him one or several on which there had been no original sin, where therefore no opposition exists between this world and the beyond, and where the unity of the universe is a dogma of faith.

The most comical part of the business is that Herr Dühring, in order to prove the non-existence of God from

the idea of being, uses the ontological proof for the existence of God. This runs: when we think of God, we conceive him as the sum total of all perfections. But the sum total of all perfections includes above all existence, since a non-existent being is necessarily imperfect. We must therefore include existence among the perfections of God. Hence God must exist.

Herr Dühring reasons in exactly the same way: when we think of being, we conceive it as *one* idea. Whatever is comprised in *one* idea is a unity. Being would not correspond to the idea of being if it were not a unity. Consequently it must be a unity. Consequently there is no God, and so on.

When we speak of *being*, and *purely* of being, unity can only consist in that all the objects to which we are referring—*are*, exist. They are comprised in the unity of this being, and in no other unity, and the general dictum that they all *are* not only cannot give them any additional qualities, whether common or not, but provisionally excludes all such qualities from consideration. For as soon as we depart even a millimetre from the simple basic fact that being is common to all these things, the *differences* between these things begin to emerge—and whether these differences consist in the circumstance that some are white and others black, that some are animate and others inanimate, that some may be of this world and others of the world beyond, cannot be decided by us from the fact that mere existence is in equal manner ascribed to them all.

The unity of the world does not consist in its being, although its being is a pre-condition of its unity, as it must certainly first *be* before it can be *one*. Being, indeed, is always an open question beyond the point where our sphere of observation ends. The real unity of the world

consists in its materiality, and this is proved not by a few juggled phrases, but by a long and wearisome development of philosophy and natural science.

To return to the text. The *being* which Herr Dühring is telling us about is "not that pure, self-equal being which lacks all special determinants, and in fact represents only the counterpart of the idea of *nothing* or of the absence of idea." But we shall see very soon that Herr Dühring's universe really starts with a being which lacks all inner differentiation, all motion and change, and is therefore in fact only a counterpart of the idea of nothing, and therefore really nothing. Only out of this *being-nothing* develops the present differentiated, changing state of the universe, which represents a development, a *becoming*; and it is only after we have grasped this that we are able, even within this perpetual change, to "maintain the conception of universal being in a self-equal state." We have now, therefore, the idea of being on a higher plane, where it includes within itself both inertness and change, being and becoming. Having reached this point, we find that "genus and species, or the general and the particular, are the simplest means of differentiation, without which the constitution of things cannot be understood." But these are means of differentiation of *qualities*; and after these have been dealt with, we proceed: "In opposition to genus stands the concept of magnitude, as of a homogeneity in which no further differences of species exist"; and so from *quality* we pass to *quantity*, and this is always "*measurable*."

Let us now compare this "sharp division of the general effect-schemata" and its "really critical standpoint" with the crudities, wild ravings and delirious fantasies of a Hegel. We find that Hegel's *Logic* starts from *being* —as with Herr Dühring; that being turns out to be *nothing*, just as with Herr Dühring; that from this being-noth-

ing there is a transition to *becoming*, the result of which is determinate being (*Dasein*), i.e., a higher, fuller form of being (*Sein*)—just the same as with Herr Dühring. Determinate being leads on to *quality*, and quality on to *quantity*—just the same as with Herr Dühring. And so that no essential feature may be missing, Herr Dühring tells us on another occasion: "From the realm of non-sensation a transition is made to that of sensation, in spite of all quantitative gradations, only through a *qualitative leap*, of which we ... can say that it is infinitely different from the mere gradation of one and the same property." This is precisely the Hegelian nodal line of measure relations, in which, at certain definite nodal points, the purely quantitative increase or decrease gives rise to a *qualitative leap*; for example, in the case of heated or cooled water, where boiling-point and freezing-point are the nodes at which—under normal pressure—the leap to a new state of aggregation takes place, and where consequently quantity is transformed into quality.

Our investigation has likewise tried to reach down to the roots, and it finds the roots of the deep-rooted basic schemata of Herr Dühring to be—the "delirious fantasies" of a Hegel, the categories of Hegelian *Logic*, Part I, the Doctrine of Being, in strictly old-Hegelian "succession" and with hardly any attempt to cloak the plagiarism!

And not content with pilfering from his worst-slandered predecessor the latter's whole scheme of being, Herr Dühring, after himself giving the above-quoted example of the leap-like change from quantity into quality, says of Marx without the slightest perturbation: "How ridiculous, for example, is the reference (made by Marx) to the Hegelian *confused, hazy notion* that *quantity is transformed into quality*!"

Confused, hazy notion! Who has been transformed here? And who is ridiculous here, Herr Dühring?

All these pretty little things are therefore not only not "axiomatically decided," as prescribed, but are merely imported from outside, that is to say, from Hegel's *Logic*. And in fact in such a form that in the whole chapter there is not even the semblance of any internal coherence unless borrowed from Hegel, and the whole question finally trickles out in a meaningless subtilizing about space and time, inertness and change.

From being Hegel passes to essence, to dialectics. Here he deals with the determinations of reflection, their internal *antagonisms* and contradictions, as for example, positive and negative; he then comes to *causality* or the relation of cause and effect and ends with *necessity*. Not otherwise Herr Dühring. What Hegel calls the doctrine of essence Herr Dühring translates into "logical properties of being." These, however, consist above all in the "antagonism of forces," in *opposites*. Contradiction, however, Herr Dühring absolutely denies; we will return to this point later. Then he passes over to *causality*, and from this to *necessity*. So that when Herr Dühring says of himself: "We, who do not philosophize *out of a cage*," he apparently means that he philosophizes *in* a cage, namely, the cage of the Hegelian schematism of categories.

V

NATURAL PHILOSOPHY. TIME AND SPACE

We now come to *natural philosophy*. Here again Herr Dühring has every cause for dissatisfaction with his predecessors. Natural philosophy "sank so low that it became an arid, spurious doggerel founded on ignorance," and "fell to the prostituted philosophistics of a Schelling and his like, rigging themselves out in the priesthood of the Absolute and hoodwinking the public." Fatigue has saved us from these "deformities"; but up to now it has only given place to "instability"; "and as far as the public at large is concerned, it is well known that the disappearance of a great charlatan is often only the opportunity for a lesser but commercially more experienced successor to put out again, under another sign-board, the products of his predecessor." Natural scientists themselves feel little "inclination to make excursions into the realm of world-encompassing ideas," and consequently jump to "wild and hasty conclusions" in the theoretical sphere. The need for deliverance is therefore urgent, and by a stroke of good luck Herr Dühring is at hand.

In order properly to appreciate the revelations which now follow on the development of the world in time and its limitations in space, we must turn back again to certain passages in *World Schematism*.

Infinity—which Hegel calls *bad* infinity—is attributed to being, also in accordance with Hegel (*Encyclopaedia*, § 93), and then this infinity is investigated. "The clearest

form of an infinity which can be conceived *without contradiction* is the unlimited accumulation of numbers in a numerical series.... As we can add yet another unit to any number, without ever exhausting the possibility of further numbers, so also to every state of being a further state succeeds, and infinity consists in the unlimited begetting of these states. This *exactly conceived* infinity has consequently only one single basic form with one single direction. For although it is immaterial to our thought whether or not it conceives an opposite direction in the accumulation of states, this retrogressing infinity is nevertheless only a rashly constructed thought-image. Indeed, since this infinity would have to be traversed in reality in the *reverse* direction, it would in each of its states have an infinite succession of numbers behind itself. But this would involve the impermissible contradiction of a counted infinite numerical series, and so it is contrary to reason to postulate any second direction in infinity."

The first conclusion drawn from this conception of infinity is that the chain of causes and effects in the world must at some time have had a beginning: "an infinite number of causes which assumedly already have lined up next to one another is inconceivable, just because it presupposes that the uncountable has been counted." And thus a *final cause* is proved.

The second conclusion is "the law of definite number: the accumulation of identities of any actual species of independent things is only conceivable as forming a definite number." Not only must the number of celestial bodies existing at any point of time be in itself finite, but so must also the total number of all, even the tiniest independent particles of matter existing in the world. This latter requisite is the real reason why no composition can be conceived without atoms. All actual division has always a definite limit, and must have it if the contradic-

tion of the counted uncountable is to be avoided. For the same reason, not only must the number of the earth's revolutions round the sun up to the present time be a finite number, even though it cannot be stated, but all periodical processes of nature must have had some beginning, and all differentiation, all the multifariousness of nature which appears in succession must have its roots in one *self-equal state.* This state may, without involving a contradiction, have existed from eternity; but even this idea would be excluded if time in itself were composed of real parts and were not, on the contrary, merely arbitrarily divided up by our minds owing to the variety of conceivable possibilities. The case is quite different with the real, and in itself distinguished content of time; this real filling of time with distinguishable facts and the forms of being of this sphere belong, precisely because of their distinguishability, to the realm of the countable. If we imagine a state in which no change occurs and which in its self-equality provides no differences of succession whatever, the more specialized idea of time transforms itself into the more general idea of being. What the accumulation of empty duration would mean is quite unimaginable.

Thus far Herr Dühring, and he is not a little edified by the significance of these revelations. At first he hopes that they will "at least not be regarded as paltry truths"; but later we find: "Recall to your mind the *extremely simple* methods by which *we* helped forward the concepts of infinity and their critique to a *hitherto unknown import* . . . the elements of the universal conception of space and time, which have been given such *simple* form by the sharpening and deepening now effected."

We helped forward! The deepening and sharpening now effected! Who are "we," and when is this "now"? Who is deepening and sharpening?

"Thesis: The world has a beginning in time, and with regard to space is also limited.

"Proof: For if it is assumed that the world has no beginning in time, then an eternity must have elapsed up to every given point of time, and consequently an infinite series of successive states of things must have passed away in the world. The infinity of a series, however, consists precisely in this, that it never can be completed by means of a successive synthesis. Hence an infinite elapsed series of worlds is impossible, and consequently a beginning of the world is a necessary condition of its existence. And this was the first thing to be proved.

"With regard to the second, if the opposite is again assumed, then the world must be an infinite given total of co-existent things. Now we cannot conceive the dimensions of a quantum, which is not given within certain limits of an intuition, in any other way than by means of the synthesis of its parts, and can conceive the total of such a quantum only by means of a completed synthesis, or by the repeated addition of a unit to itself. Accordingly, to conceive the world, which fills all spaces, as a whole, the successive synthesis of the parts of an infinite world would have to be looked upon as completed; that is, an infinite time would have to be regarded as elapsed in the enumeration of all co-existing things. This is impossible. For this reason an infinite aggregate of actual things cannot be regarded as a given whole nor, therefore, as given *at the same time*. Hence it follows that the world is not infinite, as regards extension in space, but enclosed in limits. And this was the second thing to be proved."

These sentences are copied word for word from a well-known book which first appeared in 1781 and is called: *Critique of Pure Reason*, by *Immanuel Kant*, where all and sundry can read them, in the first part, Second Divi-

sion, Book II, Chapter II, Section II: The First Antinomy of Pure Reason. So that Herr Dühring's fame rests solely on his having tacked on the *name*—Law of Definite Number—to an idea expressed by Kant, and on having made the discovery that there was once a time when as yet there was no time, though there was a world. As regards all the rest, that is, anything in Herr Dühring's exegesis which has some meaning, "we"—is Immanuel Kant, and the "now" is only ninety-five years ago. Certainly "extremely simple"! Remarkable "hitherto unknown import"!

Kant, however, does not at all claim that the above propositions are established by his proof. On the contrary; on the opposite page he states and proves the opposite: that the world has no beginning in time and no end in space; and it is precisely in this that he finds the antinomy, the insoluble contradiction, that the one is just as demonstrable as the other. People of smaller calibre might perhaps feel a little doubt here on account of "a Kant" having found an insoluble difficulty. But not so our valiant fabricator of "from the ground up original conclusions and views"; he cheerfully copies down as much of Kant's antinomy as suits his purpose, and throws the rest aside.

The problem itself has a very simple solution. Eternity in time, infinity in space, signify from the start, and in the simple meaning of the words, that there is no end in *any* direction, neither forwards nor backwards, upwards or downwards, to the right or to the left. This infinity is something quite different from that of an infinite series, for the latter always starts from one, with a first term. The inapplicability of this idea of series to our object becomes clear directly we apply it to space. The infinite series, transferred to the sphere of space, is a line drawn from a definite point in a definite direction to

infinity. Is the infinity of space expressed in this even in the remotest way? On the contrary, the idea of spatial dimensions involves six lines drawn from this one point in three opposite directions, and consequently we would have six of these dimensions. Kant saw this so clearly that he transferred his numerical series only indirectly, in a roundabout way, to the space relations of the world. Herr Dühring, on the other hand, compels us to accept six dimensions in space, and immediately afterwards can find no words to express his indignation at the mathematical mysticism of Gauss, who would not rest content with the usual three dimensions of space.

As applied to time, the line or series of units infinite in both directions has a certain figurative meaning. But if we think of time as a series counted from *one* forward, or as a line starting from a definite *point*, we imply in advance that time has a beginning: we put forward as a premise precisely what we are to prove. We give the infinity of time a one-sided, halved character; but a one-sided, halved infinity is also a contradiction in itself, the exact opposite of an "infinity conceived without contradiction." We can only get past this contradiction if we assume that the *one* from which we begin to count the series, the point from which we proceed to measure the line is any *one* in the series, that it is any one of the points in the line, and that it is a matter of indifference to the line or to the series where we place this *one* or this point.

But what of the contradiction of "the counted infinite numerical series"? We shall be in a position to examine this more closely as soon as Herr Dühring has performed for us the clever trick of *counting it*. When he has completed the task of counting from $-\infty$ (minus infinity) to 0 let him come again. It is certainly obvious that, at whatever point he begins to count, he will leave behind him an infinite series and, with it, the task which he is

to fulfil. Let him just reverse his own infinite series $1 + 2 + 3 + 4 \ldots$ and try to count from the infinite end back to 1; it would obviously only be attempted by a man who has not the faintest understanding of what the problem is. And again: if Herr Dühring states that the infinite series of elapsed time has been counted, he is thereby stating that time has a beginning; for otherwise he would not have been able to start "counting" at all. Once again, therefore, he puts into the argument, as a premise, the thing that he has to prove. The idea of an infinite series which has been counted, in other words, the world-encompassing Dühringian law of definite number, is therefore a *contradictio in adjecto*, contains within itself a contradiction, and in fact an *absurd* contradiction.

It is clear that an infinity which has an end but no beginning is neither more nor less infinite than that which has a beginning but no end. The slightest dialectical insight should have told Herr Dühring that beginning and end necessarily belong together, like the North Pole and the South Pole, and that if the end is left out, the beginning just becomes the end—the *one* end which the series has; and vice versa. The whole deception would be impossible but for the mathematical usage of working with infinite series. Because in mathematics it is necessary to start from definite, finite terms in order to reach the indefinite, the infinite, all mathematical series, positive or negative, must start from 1, or they cannot be used for calculation. The abstract requirement of a mathematician is, however, far from being a compulsory law for the world of reality.

For that matter, Herr Dühring will never succeed in conceiving real infinity without contradiction. Infinity *is* a contradiction, and is full of contradictions. From the outset it is a contradiction that an infinity is composed of nothing but finites, and yet this is the case. The limit-

edness of the material world leads no less to contradictions than its unlimitedness, and every attempt to get over these contradictions leads, as we have seen, to new and worse contradictions. It is just *because* infinity is a contradiction that it is an infinite process, unrolling endlessly in time and in space. The removal of the contradiction would be the end of infinity. Hegel saw this quite correctly, and for that reason treated with well-merited contempt the gentlemen who subtilized over this contradiction.

Let us pass on. So time had a beginning. What was there before this beginning? The universe, which was then in a self-equal, unchanging state. And as in this state no changes succeed one another, the more specialized idea of time transforms itself into the more general idea of *being*. In the first place, we are here not in the least concerned with what ideas change in Herr Dühring's head. The subject at issue is not the *idea of time*, but *real* time, which Herr Dühring cannot rid himself of so cheaply. In the second place, however much the idea of time may convert itself into the more general idea of being, this does not take us one step further. For the basic forms of all being are space and time, and being out of time is just as gross an absurdity as being out of space. The Hegelian "timelessly past being" and the neo-Schellingian "unpreconceivable being" are rational ideas compared with this being out of time. And for this reason Herr Dühring sets to work very cautiously; actually it is of course time, but of such a kind as cannot really be called time; time, indeed, in itself does not consist of real parts, and is only divided up at will by our mind—only an actual filling of time with distinguishable facts is susceptible of being counted—what the accumulation of empty duration means is quite unimaginable. What this accumulation is supposed to mean is here beside the

point; the question is, whether the world, in the state here assumed, has duration, passes through a duration in time. We have long known that we can get nothing by measuring such a duration without content just as we can get nothing by measuring without aim or purpose in empty space; and Hegel, just because of the weariness of such an effort, calls such an infinity *bad*. According to Herr Dühring time exists only through change; change in and through time does not exist. Just because time is different from change, is independent of it, it is possible to measure it by change, for measuring always requires something different from the thing to be measured. And time in which no recognizable changes occur is very far removed from *not* being time; it is rather *pure* time, unaffected by any foreign admixtures, that is, real time, time *as such*. In fact, if we want to grasp the idea of time in all its purity, divorced from all alien and extraneous admixtures, we are compelled to put aside, as not being relevant here, all the various events which occur simultaneously or one after another in time, and in this way to form the idea of a time in which nothing happens. In doing this, therefore, we have not let the concept of time be submerged in the general idea of being, but have thereby for the first time arrived at the pure concept of time.

But all these contradictions and impossibilities are only mere child's play compared with the confusion into which Herr Dühring falls with his self-equal initial state of the world. If the world had ever been in a state in which no change whatever was taking place, how could it pass from this state to alteration? The absolutely unchanging, especially when it has been in this state from eternity, cannot possibly get out of such a state by itself and pass over into a state of motion and change. An initial impulse must therefore have come from outside, from outside the universe, an impulse which set it in motion. But as

everyone knows, the "initial impulse" is only another expression for God. God and the beyond, which in his world schematism Herr Dühring pretended to have so beautifully unrigged, are both introduced again by him here, sharpened and deepened, into natural philosophy.

Further, Herr Dühring says: "Where magnitude is attributed to a constant element of being, it will remain unchanged in its determinateness. This holds good... of matter and mechanical force." The first sentence, it may be noted in passing, is a precious example of Herr Dühring's axiomatic-tautological grandiloquence: where magnitude does not change, it remains the same. Therefore the amount of mechanical force which exists in the world remains the same for all eternity. We will overlook the fact that, in so far as this is correct, Descartes already knew and said it in philosophy nearly three hundred years ago; that in natural science the theory of the conservation of energy has held sway for the last twenty years; and that Herr Dühring, in limiting it to *mechanical* force, does not in any way improve on it. But where was the mechanical force at the time of the unchanging state? Herr Dühring obstinately refuses to give us any answer to this question.

Where, Herr Dühring, was the eternally self-equal mechanical force at that time, and what did it put in motion? The reply: "The original state of the universe, or to put it more plainly, of an unchanging existence of matter which comprised no accumulation of changes in time, is a question which can be spurned only by a mind that sees the acme of wisdom in the self-mutilation of its own generative power."

Therefore: either you accept without examination my unchanging original state, or I, Eugen Dühring, the possessor of creative power, will certify you as intellectual eunuchs. That may, of course, deter a good many people.

But we, who have already seen some examples of Herr Dühring's generative power, can permit ourselves to leave this genteel abuse unanswered for the moment, and ask once again: But Herr Dühring, if you please, what about that mechanical force?

Herr Dühring at once grows embarrassed. In actual fact, he stammers, "the absolute identity of that initial extreme state does not in itself provide any principle of transition. But we must remember that at bottom the position is similar with every new link, however small, in the chain of existence with which we are familiar. So that whoever wants to raise difficulties in the fundamental case now under consideration must take care that he does not allow himself to pass them by on less obvious occasions. Moreover, there exists the possibility of interposing successively graduated intermediate stages, and also a bridge of continuity by which it is possible to move backwards and reach the extinction of the process of change. It is true that from a purely conceptual standpoint this continuity does not help us past the main difficulty, but to us it is the basic form of all regularity and of every known form of transition in general, so that we are entitled to use it also as a medium between that first equilibrium and the disturbance of it. But if we had conceived the so to speak (!) motionless equilibrium on the model of the ideas which are accepted without any particular objection (!) in our present-day mechanics, there would be no way of explaining how matter could have reached the process of change." Apart from the mechanics of masses there is, however, we are told, also a transformation of mass movement into the movement of extremely small particles, but as to how this takes place—"for this up to the present we have no general principle at our disposal and consequently we should not be surprised if in the end these processes take place somewhat *in the dark.*"

That is all Herr Dühring has to say. And in fact, we would have to see the acme of wisdom not only in the self-mutilation of our generative power, but also in blind, implicit faith, if we allowed ourselves to be put off with these really pitiable rank subterfuges and circumlocutions. Herr Dühring admits that absolute identity cannot of itself effect the transition to change. Nor is there any means whereby absolute equilibrium can of itself pass into motion. What is there, then? Three lame, false arguments.

Firstly: it is just as difficult to show the transition from each link, however small, in the chain of existence with which we are familiar, to the next one.—Herr Dühring seems to think his readers are infants. The establishment of individual transitions and connections between the tiniest links in the chain of existence is precisely the content of natural science, and when there is a hitch at some point in its work no one, not even Herr Dühring, thinks of explaining prior motion as having arisen out of nothing, but always only as a transfer, transformation or transmission of some previous motion. But here the issue is admittedly one of accepting motion as having arisen out of immobility, that is, *out of nothing*.

In the second place, we have the "bridge of continuity." From a purely conceptual standpoint, this, to be sure, does not help us over the difficulty, but all the same we are entitled to *use* it as a medium between immobility and motion. Unfortunately the continuity of immobility consists in *not* moving; how therefore it is to produce motion remains more mysterious than ever. And however infinitely small the parts into which Herr Dühring minces his transition from complete non-motion to universal motion, and however long the duration he assigns to it, we have not got a ten-thousandth part of a millimetre further. Without an act of creation we can never get from nothing

to something, even if the something were as small as a mathematical differential. The bridge of continuity is therefore not even an asses' bridge[1]; it is passable only for Herr Dühring.

Thirdly: so long as present-day mechanics holds good—and this science, according to Herr Dühring, is one of the most essential levers for the formation of thought—it cannot be explained at all how it is possible to pass from immobility to motion. But the mechanical theory of heat shows us that the movement of masses under certain conditions changes into molecular movement (although here too one motion originates from another motion, but never from immobility); and this, Herr Dühring shyly suggests, may possibly furnish a bridge between the strictly static (in equilibrium) and dynamic (in motion). But these processes take place "somewhat in the dark." And it is in the dark that Herr Dühring leaves us sitting.

This is the point we have reached with all his deepening and sharpening—that we have perpetually gone deeper into ever sharper nonsense, and finally land up where of necessity we had to land up—"in the dark." But this does not abash Herr Dühring much. Right on the next page he has the effrontery to declare that he has "been able to provide a real content for the idea of self-equal stability, directly from the behaviour of matter *and the mechanical forces*." And this man describes other people as "charlatans"!

Fortunately, in spite of all this helpless wandering and confusion "in the dark," we are left with one consolation, and this is certainly edifying to the soul: "The mathematics of the inhabitants of other celestial bodies can rest on no other axioms than our own!"

[1] In the original a play on words: *Eselsbrücke* (asses' bridge) means in German also an unauthorized aid in study used by dull-headed or lazy students; a crib or pony.—*Ed.*

VI

NATURAL PHILOSOPHY. COSMOGONY, PHYSICS, CHEMISTRY

Passing on, we come now to the theories concerning the manner in which the present world came into existence. A state of universal dispersion of matter, we are told, was the point of departure of the Ionic philosophers, but later, particularly from the time of Kant, the assumption of a primordial nebula played a new role, gravitation and the radiation of heat having been instrumental in the gradual formation of separate solid celestial bodies. The contemporary mechanical theory of heat makes it possible to deduce the earlier states of the universe in a far more definite form. However, "the state of gaseous dispersion can be a starting-point for serious deductions only when it is possible to characterize beforehand more definitely the mechanical system existing in it. Otherwise not only does the idea in fact remain extremely nebulous, but also the original fog, as the deductions progress, really becomes ever thicker and more impenetrable; ... meanwhile it all still remains in the vagueness and formlessness of an idea of diffusion that cannot be more closely determined," and so "this gaseous universe" provides us with "only an extremely airy conception."

The Kantian theory of the origin of all existing celestial bodies from rotating nebular masses was the greatest advance made by astronomy since Copernicus. For

the first time the conception that nature had no history in time began to be shaken. Until then the celestial bodies were believed to have been always, from the very beginning, in the same states and always to have followed the same courses; and even though individual organisms on the various celestial bodies died out, nevertheless genera and species were held to be immutable. It is true that nature was obviously in constant motion, but this motion appeared as an incessant repetition of the same processes. Kant made the first breach in this conception, which corresponded exactly to the metaphysical mode of thought, and he did it in such a scientific way that most of the proofs furnished by him still hold good today. At the same time, the Kantian theory is still, strictly considered, only a hypothesis. But the Copernican world system,[1] too, is still no more than this, and since the spectroscopic proof of the existence of such red-hot gaseous masses in the starry heavens, proof that brooks no contradiction, the scientific opposition to Kant's theory has been silenced. Even Herr Dühring cannot complete his construction of the world without such a nebular stage, but takes his revenge for this by demanding to be shown the mechanical system existing in this nebular stage, and because no one can show him this, he applies all kinds of depreciatory epithets to this nebular stage of the universe. Con-

[1] In his book *Ludwig Feuerbach* (1888) Engels said the following of the Copernican system: "For three hundred years the Copernican solar system was a hypothesis with a hundred, a thousand or ten thousand chances to one in its favour, but still always a hypothesis. But when Leverrier, by means of the data provided by this system, not only deduced the necessity of the existence of an unknown planet, but also calculated the position in the heavens which this planet must necessarily occupy, and when Galle really found this planet, the Copernican system was proved." See F. Engels, *Ludwig Feuerbach* (Marx-Engels, *Selected Works*, Vol. II, Moscow 1951, p. 336).—*Ed.*

temporary science unfortunately cannot describe this system to Herr Dühring's satisfaction. Just as little is it able to answer many other questions. To the question: Why do toads have no tails?—up to now it has only been able to answer: because they have lost them. But should anyone get excited over that and say that this is to leave the whole question in the vagueness and formlessness of an idea of loss which cannot be determined more closely, and that it is an extremely airy conception, such an application of morality to natural science does not take us one step further. Such expressions of dislike and bad temper can be used always and everywhere, and just for that reason they should never be used anywhere. After all, who is stopping Herr Dühring from himself discovering the mechanical system of the primordial nebula?

Fortunately we now learn that the Kantian nebular mass "is far from coinciding with a completely identical state of the world medium, or, to put it another way, with the self-equal state of matter." It was really fortunate for Kant that he was able to content himself with going back from the existing celestial bodies to the nebular ball, and did not even dream of the self-equal state of matter! It may be remarked in passing that when contemporary natural science describes the Kantian nebular ball as primordial nebula, this, it goes without saying, is only to be understood in a relative sense. It is primordial nebula, on the one hand, in that it is the origin of the existing celestial bodies, and on the other hand because it is the earliest form of matter which we have up to now been able to work back to. This certainly does not exclude but rather implies the supposition that before the nebular stage matter passed through an infinite series of other forms.

Herr Dühring sees his advantage here. Where we, with science, stand still for the time being at what for the

time being is deemed primordial nebula, his science of sciences helps him much further back to that "state of the world medium which cannot be understood either as purely static in the present meaning of the idea, or as dynamic"—which therefore cannot be understood at all. "The unity of matter and mechanical force which we call the world medium is what might be termed a logical-real formula for indicating the self-equal state of matter as the prerequisite of all enumerable stages of evolution."

We are clearly not by a long shot rid of the self-equal primordial state of matter. Here it is spoken of as the unity of matter and mechanical force, and this as a logical-real formula, etc. Hence, as soon as the unity of matter and mechanical force comes to an end motion begins.

The logical-real formula is nothing but a lame attempt to make the Hegelian categories "in itself" (*Ansich*) and "for itself" (*Fürsich*) usable in the philosophy of reality. With Hegel, "in itself" covers the original identity of the hidden, undeveloped contradictions within a thing, a process or an idea; and "for itself" contains the distinction and separation of these hidden elements and the starting-point of their conflict. We are therefore to think of the motionless primordial state as the unity of matter and mechanical force, and of the transition to movement as their separation and opposition. What we have gained by this is not any proof of the reality of that fantastic primordial state, but only the fact that it is possible to bring this state under the Hegelian category of "in itself," and its equally fantastic termination under the category of "for itself." Hegel help us!

Matter, Herr Dühring says, is the bearer of all reality; accordingly, there can be no mechanical force apart from matter. Mechanical force is furthermore a state of matter. In the original state, when nothing happened, matter and its state, mechanical force, were one. After-

wards, when something began to happen, this state must apparently have become different from matter. So we are to let ourselves be dismissed with these mystical phrases and with the assurance that the self-equal state was neither static nor dynamic, neither in equilibrium nor in motion. We still do not know where mechanical force was in that state, and how we are to get from absolute immobility to motion without an impulse from outside, that is, without God.

The materialists before Herr Dühring spoke of matter and motion. He reduces motion to mechanical force as its supposed basic form, and thereby makes it impossible for himself to understand the real connection between matter and motion, which moreover was also unclear to all former materialists. And yet it is simple enough. *Motion is the mode of existence of matter.* Never anywhere has there been matter without motion, nor can there be. Motion in cosmic space, mechanical motion of smaller masses on the various celestial bodies, the vibration of molecules as heat or as electrical or magnetic currents, chemical disintegration and combination, organic life—at each given moment each individual atom of matter in the world is in one or other of these forms of motion, or in several forms at once. All rest, all equilibrium, is only relative, only has meaning in relation to one or other definite form of motion. On the earth, for example, a body may be in mechanical equilibrium, may be mechanically at rest; but this in no way prevents it from participating in the motion of the earth and in that of the whole solar system, just as little as it prevents its most minute physical particles from carrying out the vibrations determined by its temperature, or its atoms from passing through a chemical process. Matter without motion is just as inconceivable as motion without matter. Motion is therefore as uncreatable and indestructible as matter itself; as the

older philosophy (Descartes) expressed it, the quantity of motion existing in the world is always the same. Motion therefore cannot be created; it can only be transferred. When motion is transferred from one body to another, it may be regarded, in so far as it transfers itself, is active, as the cause of motion, in so far as the latter is transferred, is passive. We call this active motion *force*, and the passive, the *manifestation of force*. Hence it is as clear as daylight that a force is as great as its manifestation, because in fact the *same* motion takes place in both.

A motionless state of matter is therefore one of the most empty and nonsensical of ideas—a "delirious fantasy" of the purest water. In order to arrive at such an idea it is necessary to conceive the relative mechanical equilibrium, a state in which a body on the earth may be, as absolute rest, and then to extend this equilibrium over the whole universe. This is certainly made easier if universal motion is reduced to purely mechanical force. And the restriction of motion to purely mechanical force has the further advantage that a force can be conceived as at rest, as tied up, and therefore for the moment inoperative. For if, as is very often the case, the transfer of a motion is a somewhat complex process containing a number of intermediate links, it is possible to postpone the actual transmission to any moment desired by omitting the last link in the chain. This is the case, for instance, if a man loads a gun and postpones the moment when, by the pulling of the trigger, the discharge, the transfer of the motion set free by the combustion of the powder, takes place. It is therefore possible to imagine that during its motionless, self-equal state, matter was loaded with force, and this, if anything at all, seems to be what Herr Dühring understands by the unity of matter and mechanical force. This conception is nonsensical, because it transfers to the entire universe a state as absolute, which

by its nature is relative and therefore can only affect *a part* of matter at any one time. Even if we overlook this point, the difficulty still remains: first, how did the world come to be loaded, since nowadays guns do not load themselves; and second, whose finger was it then that pulled the trigger? We may turn and twist as much as we like, but under Herr Dühring's guidance we always come back again to—the finger of God.

From astronomy our philosopher of reality passes on to mechanics and physics, and voices the lament that the mechanical theory of heat has not, in the generation since its discovery, been materially advanced beyond the point to which Robert Mayer had himself developed it, bit by bit. Apart from this, the whole business is still very obscure; we must "always remember that in the states of motion of matter, static relations are also present, and that these latter are not measurable by the mechanical work; ... if previously we described nature as a great worker, and if we now construe this expression strictly, we must furthermore add that the self-equal states and static relations do not represent mechanical work. So once again we miss the bridge from the static to the dynamic, and if so-called latent heat has up to now remained a stumbling-block for the theory, we must recognize a defect in this too, which can least be denied in its cosmic applications."

This whole oracular discourse is once again nothing but the outpouring of a bad conscience, which is very well aware that with its creation of motion out of absolute immobility it got irretrievably stuck in the mud, but is nevertheless ashamed to appeal to the only possible saviour, namely, the creator of heaven and earth. If the bridge from the static to the dynamic, from equilibrium to motion, cannot be found even in mechanics, including the mechanics of heat, under what obligations is Herr

Dühring to find the bridge from his motionless state to motion? That would be a fortunate way for him to get out of his plight.

In ordinary mechanics the bridge from the static to the dynamic is—the external impulse. If a stone weighing a hundredweight is raised from the ground ten yards into the air and is freely suspended in such a way that it remains hanging there in a self-equal state and in a condition of rest, it would be necessary to have an audience of sucklings to be able to maintain that the present position of this body does not represent any mechanical work, or that its distance from its previous position is not measurable by mechanical work. Any passer-by will easily explain to Herr Dühring that the stone did not rise of itself to the rope, and any manual of mechanics will tell him that if he lets the stone fall again it performs in falling just as much mechanical work as was necessary to raise it the ten yards in the air. Even the simple fact that the stone is hanging up there represents mechanical work, for if it remains hanging long enough the rope breaks, as soon as chemical decomposition makes it no longer strong enough to bear the weight of the stone. But it is to such simple basic forms, to use Herr Dühring's language, that all mechanical processes can be reduced, and the engineer is still to be born who cannot find the bridge from the static to the dynamic, so long as he has at his disposal a sufficient external impulse.

To be sure, it is a hard nut and a bitter pill for our metaphysician that motion should find its measure in its opposite, in rest. That is indeed a crying contradiction, and every contradiction, according to Herr Dühring, is nonsense.[1] It is none the less a fact that a suspended

[1] In German, an untranslatable play on the words *Widerspruch* and *Widersinn,* meaning respectively contradiction and nonsense.—*Ed.*

stone represents a definite quantity of mechanical motion, which is measurable exactly by the stone's weight and its distance from the ground, and may be used in various ways at will, for example, by its direct fall, by sliding down an inclined plane, or by turning a shaft. The same is true of a loaded gun. From the dialectical standpoint, the possibility of expressing motion in its opposite, in rest, presents absolutely no difficulty. To dialectical philosophy the whole antithesis, as we have seen, is only relative; there is no such thing as absolute rest, unconditional equilibrium. Each separate movement strives towards equilibrium, and the motion as a whole puts an end again to the equilibrium. When therefore rest and equilibrium occur they are the result of limited motion, and it is self-evident that this motion is measurable by its result, can be expressed in it, and can be restored out of it again in one form or another. But Herr Dühring cannot allow himself to be satisfied with such a simple presentation of the matter. As a good metaphysician he first tears open, between motion and equilibrium, a yawning gulf which does not exist in reality and is then surprised that he cannot find any bridge across this self-fabricated gulf. He might just as well mount his metaphysical Rocinante and chase the Kantian "thing-in-itself"; for it is that and nothing else which in the last analysis is hiding behind this undiscoverable bridge.

But what about the mechanical theory of heat and the tied-up or latent heat which "has remained a stumbling-block" for this theory?

If, under normal atmospheric pressure, a pound of ice at the temperature of the freezing point is transformed by heat into a pound of water of the same temperature, a quantity of heat disappears which would be sufficient to warm the same pound of water from 0° to 79.4° C, or to raise the temperature of 79.4 pounds of water by

one degree. If this pound of water is heated to boiling point, that is, to 100° C, and is then transformed into steam of 100°C, the amount of heat that disappears, by the time the last of the water has changed into steam, is almost seven times greater, sufficient to raise the temperature of 537.2 pounds of water by one degree. The heat that disappears is called *tied-up*. If, by cooling, the steam is again transformed into water, and the water, in its turn, into ice, the same quantity of heat as was previously tied up is now again set *free*, i.e., can be felt and measured as heat. This setting free of heat on the condensation of steam and the freezing of water is the reason why steam, when cooled to 100°, is only gradually transformed into water, and why a mass of water of freezing point temperature is only very gradually transformed into ice. These are the facts. The question is, what happens to the heat while it is tied up?

The mechanical theory of heat, according to which heat consists in a greater or lesser vibration, depending on the temperature and state of aggregation, of the smallest physically active particles (molecules) of a body—a vibration which under certain conditions can change into any other form of motion—explains that the heat that has disappeared has done work, has been transformed into work. When ice melts, the close and firm connection between the individual molecules is broken, and transformed into a loose juxtaposition; when water at boiling point becomes steam a state is reached in which the individual molecules no longer have any noticeable influence on one another, and under the influence of heat even fly apart in all directions. It is clear that the single molecules of a body are endowed with far greater energy in the gaseous state than they are in the fluid state, and in the fluid state again more than in the solid state. The tied-up heat, therefore, has not disappeared; it has merely been

transformed, and has assumed the form of molecular tension. As soon as the condition under which the separate molecules are able to maintain their absolute or relative freedom in regard to one another ceases to exist—that is, as soon as the temperature falls below the minimum of 100° or 0°, as the case may be, this tension relaxes, the molecules again press towards each other with the same force with which they had previously flown apart; and this force disappears, but only to reappear as heat, and as precisely the same quantity of heat as had previously been tied up. This explanation is of course a hypothesis, as is the whole mechanical theory of heat, inasmuch as no one has up to now ever seen a molecule, not to mention one in vibration. Just for this reason it is certain to be full of defects as this still very young theory is as a whole, but it can at least explain what happens without in any way coming into conflict with the indestructibility and uncreatability of motion, and it is even able to account for the whereabouts of heat during its transformations. Latent, or tied-up, heat is therefore in no way a stumbling-block for the mechanical theory of heat. On the contrary, this theory provides the first rational explanation of what takes place, and it involves no stumbling-block except in so far as physicists continue to describe heat which has been transformed into another form of molecular energy by means of the term "tied-up," which has become obsolete and unsuitable.

The self-equal states and conditions of rest in the solid, in the liquid and in the gaseous state of aggregation therefore represent, to be sure, mechanical work, in so far as mechanical work is the measure of heat. Both the solid crust of the earth and the water of the ocean, in their present aggregate states, represent a definite quantity of heat set free, to which of course corresponds an equally definite quantity of mechanical force. In the

transition of the gaseous ball, from which the earth has developed, into the liquid and subsequently into the largely solid aggregate state, a definite quantity of molecular energy was radiated as heat into space. The difficulty about which Herr Dühring mumbles in his mysterious manner therefore does not exist, and though even in applying the theory cosmically we may come up against defects and gaps—which must be attributed to our imperfect means of knowledge—we nowhere come up against theoretically insuperable obstacles. The bridge from the static to the dynamic is here, too, the external impulse—the cooling or heating brought about by other bodies acting on an object which is in a state of equilibrium. The further we explore this natural philosophy of Dühring's, the more impossible appear all attempts to explain motion out of immobility or to find the bridge over which the purely static, the resting, can *by itself* pass to the dynamic, to motion.

With this we have fortunately rid ourselves for a time of the self-equal primordial state. Herr Dühring passes on to chemistry, and takes the opportunity to reveal to us three laws of nature's inertness which have so far been discovered by his philosophy of reality, viz.:

(1) The quantity of all matter in general, (2) that of the simple (chemical) elements, and (3) that of mechanical force are constant.

Hence: the uncreatability and indestructibility of matter, and also of its simple component parts, in so far as it is made up of such, as well as the uncreatability and indestructibility of motion—these old facts known the world over and expressed most inadequately—is the only positive thing which Herr Dühring can provide us with as a result of his natural philosophy of the inorganic world. We knew all this long ago. But what we did not know was that they were "laws of inertness" and as

such "schematic properties of the system of things." We are witnessing a repetition of what happened above to Kant: Herr Dühring picks up some old familiar quip, sticks a Dühring label on it, and calls the result: "from the ground up original conclusions and views . . . system-creating ideas . . . deep-rooted science."

But we need not by any means despair on this account. Whatever defects even the most deep-rooted science and the best-ordered society may have, Herr Dühring can at any rate assert one thing with confidence: "the amount of gold existing in the universe must at all times have been the same, and it can have increased or diminished just as little as can matter in general." Unfortunately Herr Dühring does not tell us what we can buy with this "existing gold."

VII

NATURAL PHILOSOPHY. THE ORGANIC WORLD

"A single and uniform ladder of intermediate steps leads from the mechanics of pressure and impact to the linking together of sensations and ideas." With this assurance Herr Dühring saves himself the trouble of saying anything further about the origin of life, although it might reasonably have been expected that a thinker who had traced the evolution of the world back to its self-equal state, and is so much at home on other celestial bodies, would have known exactly what's what also on this point. For the rest, however, the assurance he gives us is only half right unless it is completed by the Hegelian nodal line of measure relations which has already been mentioned. In spite of all gradualness, the transition from one form of motion to another always remains a leap, a decisive change. This is true of the transition from the mechanics of celestial bodies to that of smaller masses on a particular celestial body; it is equally true of the transition from the mechanics of masses to the mechanics of molecules—including the forms of motion investigated in physics proper: heat, light, electricity, magnetism. In the same way, the transition from the physics of molecules to the physics of atoms—chemistry—in turn involves a decided leap; and this is even more clearly the case in the transition from ordinary chemical action to the chemism of albumen which we call life. Then within

the sphere of life the leaps become ever more infrequent and imperceptible.—Once again, therefore, it is Hegel who has to correct Herr Dühring.

The concept of purpose provides Herr Dühring with a conceptual transition to the organic world. Once again, this is borrowed from Hegel, who in his *Logic*—the Doctrine of the Notion—makes the transition from chemism to life by means of teleology, or the science of purpose. Wherever we look in Herr Dühring we run into a Hegelian "crudity," which he quite unblushingly dishes out to us as his own deep-rooted science. It would take us too far afield to investigate here the extent to which it is legitimate and appropriate to apply the ideas of means and end to the organic world. In any case, even the application of the Hegelian "inner purpose"—i.e., a purpose which is not imported into nature by some third party acting purposively, such as the wisdom of providence, but lies in the necessity of the thing itself—constantly leads people who are not well versed in philosophy to thoughtlessly ascribing to nature conscious and purposive activity. That same Herr Dühring who is filled with boundless moral indignation at the slightest "spiritistic" tendency in other people assures us "with certainty that the instinctive sensations were primarily created for the sake of the satisfaction involved in their activity." He tells us that poor nature "is obliged incessantly to maintain order in the world of objects," and in doing so she has to settle more than one business "which requires more subtlety on the part of nature than is usually credited to her." But nature not only *knows* why she does one thing or another; she has not only to perform the duties of a housemaid, she not only possesses subtlety, in itself a pretty good accomplishment in subjective conscious thought; she has also a will. For what the instincts do in addition, incidentally fulfilling real natural functions such

as nutrition, propagation, etc., "we should not regard as directly but only indirectly *willed*." So we have arrived at a consciously thinking and acting nature, and are thus already standing on the "bridge"—not indeed from the static to the dynamic, but from pantheism to deism. Or is Herr Dühring perhaps just for once indulging a little in "natural-philosophical semi-poetry"?

Impossible! All that our philosopher of reality can tell us of organic nature is restricted to the fight against this natural-philosophical semi-poetry, against "charlatanism with its frivolous superficialities and pseudo-scientific mystifications," against the "poetizing features" of *Darwinism*.

The main reproach levelled against Darwin is that he transferred the Malthusian population theory from political economy to natural science, that he was held captive by the ideas of an animal breeder, that in his theory of the struggle for existence he pursued unscientific semi-poetry, and that the whole of Darwinism, after deducting what had been borrowed from Lamarck, is a piece of brutality directed against humanity.

Darwin brought back from his scientific travels the view that plant and animal species are not constant but subject to variation. In order to follow up this idea after his return home there was no better field available than that of the breeding of animals and plants. It is precisely in this field that England is the classical country; the achievements of other countries, for example Germany, fall far short of what England has achieved in this connection. Moreover, most of these successes have been won during the last hundred years, so that there is very little difficulty in establishing the facts. Darwin found that this breeding produced artificially, among animals and plants of the same species, differences greater than those found in what are generally recognized as different

species. Thus was established on the one hand the variability of species up to a certain point, and on the other the possibility of a common ancestry for organisms with different specific characteristics. Darwin then investigated whether there were not possibly causes in nature which—without the conscious intention of the breeder—would nevertheless in the long run produce in living organisms changes similar to those produced by artificial breeding. He discovered these causes in the disproportion between the immense number of germs created by nature and the insignificant number of organisms which actually attain maturity. But as each germ strives to develop, there necessarily arises a struggle for existence which manifests itself not merely as direct bodily combat or devouring, but also as a struggle for space and light, even in the case of plants. And it is evident that in this struggle those individuals which have some individual peculiarity, however insignificant, that gives them an advantage in the struggle for existence will have the best prospect of reaching maturity and propagating themselves. These individual peculiarities have thus the tendency to descend by heredity, and when they occur among many individuals of the same species, to become more pronounced through accumulated heredity in the direction once taken; while those individuals which do not possess these peculiarities succumb more easily in the struggle for existence and gradually disappear. In this way a species is altered through natural selection, through the survival of the fittest.

Against this Darwinian theory Herr Dühring now says that the origin of the idea of the struggle for existence, as, he claims, Darwin himself admitted, has to be sought in a generalization of the views of the economist and theoretician of population, Malthus, and that the idea

therefore suffers from all the defects inherent in the priestly Malthusian ideas of over-population.

Now Darwin would not dream of saying that the *origin* of the idea of the struggle for existence is to be found in Malthus. He only says that his theory of the struggle for existence is the theory of Malthus applied to the animal and plant world as a whole. However great the blunder made by Darwin in accepting the Malthusian theory so naively and uncritically, nevertheless anyone can see at the first glance that no Malthusian spectacles are required to perceive the struggle for existence in nature—the contradiction between the countless host of germs which nature so lavishly produces and the small number of those which ever reach maturity, a contradiction which in fact for the most part finds its solution in a struggle for existence—often of extreme cruelty. And just as the law of wages has maintained its validity even after the Malthusian arguments on which Ricardo based it have long been consigned to oblivion, so likewise the struggle for existence can take place in nature, even without any Malthusian interpretation. For that matter, the organisms of nature also have their laws of population, which have been left practically uninvestigated, although their establishment would be of decisive importance for the theory of the evolution of species. But who was it that lent decisive impetus to work in this direction too? No other than Darwin.

Herr Dühring carefully avoids an examination of this positive side of the question. Instead, the struggle for existence is arraigned again and again. It is obvious, according to him, that there can be no talk of a struggle for existence among unconscious plants and good-natured plant-eaters: "in the precise and definite sense the struggle for existence is found in the realm of brutality to the extent that animals live on prey and its devour-

ment." And after he has reduced the idea of the struggle for existence to these narrow limits he can give full vent to his indignation at the brutality of this idea, which he himself has restricted to brutality. But this moral indignation only rebounds upon Herr Dühring himself, who is indeed the only author of the struggle for existence in this limited conception and is therefore solely responsible for it. It is consequently not Darwin who "sought the laws and understanding of all nature's actions in the kingdom of the brutes"—Darwin had in fact expressly included the whole of organic nature in the struggle—but an imaginary bugbear dressed up by Herr Dühring himself. The *name:* the struggle for existence, can for that matter be willingly sacrificed to Herr Dühring's highly moral indignation. That the *fact* exists also among plants can be demonstrated to him by every meadow, every cornfield, every wood; and the question at issue is not what it is to be called, whether "struggle for existence" or "lack of conditions of life and mechanical effects," but how this fact influences the preservation or variation of species. On this point Herr Dühring maintains an obstinate and self-equal silence. Therefore for the time being everything may remain as it was in natural selection.

But Darwinism "produces its transformations and differences out of nothing." It is true that Darwin, when considering natural selection, leaves out of account the *causes* which have produced the alterations in separate individuals, and deals in the first place with the way in which such individual deviations gradually become the characteristics of a race, variety or species. To Darwin it was of less immediate importance to discover these causes—which up to the present are in part absolutely unknown, and in part can only be stated in quite general terms—than to find a rational form in which their effects become fixed, acquire permanent significance. It is true

that in doing this Darwin attributed to his discovery too wide a field of action, made it the sole agent in the alteration of species and neglected the causes of the repeated individual variations, concentrating rather on the form in which these variations become general; but this is a mistake which he shares with most other people who make any real advance. Moreover, if Darwin produces his individual transformations out of nothing, and in so doing applies exclusively "the wisdom of the breeder," the breeder, too, must produce *out of nothing* his transformations in animal and plant forms which are not merely imaginary but real. But once again, the man who gave the impetus to investigate how exactly these transformations and differences arise is no other than Darwin.

In recent times the idea of natural selection was extended, particularly by Haeckel, and the variation of species conceived as a result of the mutual interaction of adaptation and heredity, in which process adaptation is taken as the factor which produces variations, and heredity as the preserving factor. This is also not regarded as satisfactory by Herr Dühring. "Real adaptation to conditions of life which are offered or withheld by nature presupposes impulses and actions determined by ideas. Otherwise the adaptation is only apparent, and the causality operative thereupon does not rise above the low grades of the physical, chemical and plant-physiological." Once again it is the name which makes Herr Dühring angry. But whatever name he may give to the process, the question here is whether variations in the species of organisms are produced through such processes or not. And again Herr Dühring gives no answer.

"If, in growing, a plant takes the path along which it will receive most light, this effect of the stimulus is nothing but a combination of physical forces and chemical agents, and any attempt to describe it as adaptation—

not metaphorically, but in the strict sense of the word—must introduce a *spiritistic* confusion into the concepts." Such is the severity meted out to others by the very man who knows exactly by whose *will* nature does one thing or another, who speaks of nature's *subtlety* and even of her *will*! Spiritistic confusion, yes—but where, in Haeckel or in Herr Dühring?

And not only spiritistic, but also logical confusion. We saw that Herr Dühring insists with might and main on establishing the validity in nature of the concept of purpose: "The relation between means and end does not in the least presuppose a conscious intention." What, then, is adaptation without conscious intention, without the mediation of ideas, which he so zealously opposes, if not such unconscious purposive activity?

If therefore tree-frogs and leaf-eating insects are green, desert animals sandy-yellow, and animals of the polar regions mainly snow-white in colour, they have certainly not adopted these colours on purpose or in conformity with any ideas; on the contrary, the colours can only be explained on the basis of physical forces and chemical agents. And yet it cannot be denied that these animals, because of those colours, are purposively *adapted* to the environment in which they live, in that they have become far less visible to their enemies. In just the same way the organs with which certain plants seize and devour insects alighting on them are adapted to this action, and even purposively adapted. Consequently, if Herr Dühring insists that this adaptation must be effected through ideas, he as much as says, only in other words, that purposive activity must also be brought about through ideas, must be conscious and intentional. And this brings us, as is usually the case in his philosophy of reality, to a purposive creator, to God. "An explanation of this kind used to be called deism, and was not thought much of"

—Herr Dühring tells us—"but in this connection, too, things now seem to have developed backwards."

From adaptation we now pass on to heredity. Here likewise, according to Herr Dühring, Darwinism is completely on the wrong track. The whole organic world, Darwin is said to have asserted, descended from one primordial being, is so to speak the progeny of one single being. Dühring states that, in Darwin's view, there is no such thing as the independent parallel lines of homogeneous products of nature unless mediated by common descent; and that therefore Darwin and his retrospectively directed views had perforce to come to an end at the point where the thread of begetting, or other form of propagation, breaks off.

The statement that Darwin traced all existing organisms back to *one* primordial being is, to put it politely, a product of Herr Dühring's "own free creation and imagination." Darwin expressly says on the last page but one of his *Origin of Species*, sixth edition, that he regards "all beings not as special creations, but as the lineal descendants *of some few beings*." And Haeckel even goes considerably further, assuming "a quite independent stock for the vegetable kingdom, and a second for the animal kingdom," and between the two "a number of independent stocks of protista, each of which, quite independently of the former, has developed out of one special archegon of the moneron type" (*Schöpfungsgeschichte,* S. 397).[1] This primordial being was only invented by Dühring in order to bring it into as great disrepute as possible by drawing a parallel with the primordial Jew Adam; and in this he—that is to say, Herr Dühring—suffers the misfortune of not having the faintest idea that this primordial Jew had been shown by Smith's Assyrian

[1] *The History of Creation*, p. 397.—*Ed.*

discoveries to have been a primordial Semite, and that the whole biblical history of creation and the flood turns out to be a part of the old heathen religious myths which the Jews have in common with the Babylonians, Chaldeans and Assyrians.

It is certainly a bitter reproach against Darwin, and one for which he has no defence, that he comes to an end at once at the point where the thread of descent breaks off. Unfortunately it is a reproach which has been earned by the whole of our natural science. Where the thread of descent breaks off for it, it "ends." It has not yet succeeded in producing organic beings without descent from others; indeed, it has not yet succeeded even in producing simple protoplasm or other albuminous bodies out of chemical elements. With regard to the origin of life, therefore, up to the present, natural science is only able to say with certainty that it must have been the result of chemical action. However, perhaps the philosophy of reality is in a position to give some help on this point as it has at its disposal independent parallel lines of products of nature not mediated by common descent. How can these have come into existence? By spontaneous generation? But up to now even the most audacious advocates of spontaneous generation have not claimed that this produced anything but bacteria, embryonic fungi and other very primitive organisms—no insects, fishes, birds or mammals. But if these homogeneous products of nature—organic, of course, as here we are only dealing with these—are not connected by descent, they or each of their ancestors must, at the point "where the thread of descent breaks off," have been put into the world by a separate act of creation. So we arrive once again at a creator and at what is called deism.

Herr Dühring further declares that it was very superficial on Darwin's part "to make the mere act of the

sexual composition of properties the fundamental principle of the origin of these properties." This is another free creation and imagination of our deep-rooted philosopher. Darwin definitely states the opposite: the expression natural selection only implies the *preservation* of variations, not their origin (p. 63). This new imputation to Darwin of things he never said nevertheless helps us to grasp the following depth of Dühringian mentality: "If some principle of independent variation had been found in the inner schematism of generation, this idea would have been quite rational; for it is a natural idea to combine the principle of universal genesis with that of sexual propagation into a unity, and to regard so-called spontaneous generation, from a higher standpoint, not as the absolute antithesis of reproduction but just as a production." And the man who can write such rubbish is not ashamed to reproach Hegel for his "jargon"!

But enough of the peevish, contradictory grumbling and nagging through which Herr Dühring gives vent to his anger at the colossal impetus which natural science owes to the driving force of the Darwinian theory. Neither Darwin nor his followers among naturalists ever think of belittling in any way the great services rendered by Lamarck; in fact, they are the very people who first put him up again on his pedestal. But we must not overlook the fact that in Lamarck's time science was as yet far from being in possession of sufficient material to have enabled it to answer the question of the origin of species except in an anticipatory way, prophetically, as it were. In addition to the enormous mass of material, both of descriptive and anatomical botany and zoology, which has accumulated in the intervening period, two completely new sciences have arisen since Lamarck's time, and these are of decisive importance on this question: research into the development of plant and animal germs

(embryology) and research into the organic remains preserved in the various strata of the earth's surface (palaeontology). There is in fact a peculiar correspondence between the gradual development of organic germs into mature organisms and the succession of plants and animals following each other in the history of the earth. And it is precisely this correspondence which has given the theory of evolution its most secure basis. The theory of evolution itself is however still in a very early stage, and it therefore cannot be doubted that further research will greatly modify our present conceptions, including strictly Darwinian ones, of the process of the evolution of species.

What, of a positive character, has the philosophy of reality to tell us concerning the evolution of organic life?

"The ... variability of species is a presupposition which can be accepted." But alongside it there hold also "the independent parallel lines of homogeneous products of nature, not mediated by common descent." From this we are apparently to infer that the heterogeneous products of nature, i.e., the species which show variations, descend from each other but not so the homogeneous products. But this is not altogether correct either; for even with species which show variations "mediation by common descent is on the contrary quite a secondary act of nature." So we get common descent after all, but only "second class." We must rejoice that after Herr Dühring has attributed so much to it that is evil and obscure, we nevertheless find it in the end readmitted by the backdoor. It is the same with natural selection, for after all his moral indignation over the struggle for existence through which natural selection operates we suddenly read: "The deeper basis of the constitution of organisms is thus to be sought in the conditions of life and cosmic

relations, while the natural selection emphasized by Darwin can only come in as a secondary factor." So we get natural selection after all, though only second class; and along with natural selection also the struggle for existence, and with that also the priestly Malthusian over-population! That is all, and for the rest Herr Dühring refers us to Lamarck.

In conclusion he warns us against the misuse of the terms metamorphosis and development. Matamorphosis, he maintains, is an unclear concept, and the concept development is permissible only in so far as laws of development can be really established. In place of both these terms we should use the term "composition," and then everything would be all right. It is the same old story over again: things remain as they were, and Herr Dühring is quite satisfied as soon as we just alter the names. When we speak of the development of the chicken in the egg we are creating confusion, for we are able to prove the laws of development only in an incomplete way. But if we speak of its composition everything becomes clear. We shall therefore no longer say: This child is developing finely, but: It is composing itself magnificently. We can congratulate Herr Dühring on being a worthy peer of the author of the *Nibelungenring* not only in his noble self-esteem but also in his capacity of composer of the future.

VIII

NATURAL PHILOSOPHY. THE ORGANIC WORLD (Conclusion)

"Ponder ... what positive knowledge is required to equip our section on natural philosophy with all its scientific premises. Its basis is provided firstly by all the fundamental achievements of mathematics, and then the principal propositions established by exact science in mechanics, physics and chemistry, as well as the general conclusions of natural science in physiology, zoology and similar branches of inquiry."

Such is the confidence and assurance with which Herr Dühring speaks of the mathematical and naturalistic erudition of Herr Dühring. It is impossible to detect from the meagre section concerned, and still less from its even more paltry conclusions, what deep-rooted positive knowledge lies behind them. In any case, in order to create the Dühring oracle on physics and chemistry, it is not necessary to know any more of physics than the equation which expresses the mechanical equivalent of heat, or any more of chemistry than that all bodies can be divided into elements and combinations of elements. Moreover, a person who can talk of "gravitating atoms," as Herr Dühring does (p. 131), only proves that he is completely "in the dark" as to the difference between atoms and molecules. As is well known, it is only chemical action, and not gravitation or other mechanical or physical forms of motion, that is explained by atoms.

And if anyone should read as far as the chapter on organic nature, with its vacuous, self-contradictory and, at the decisive point, oracularly senseless meandering verbiage, and its absolutely futile final conclusion, he will not be able to avoid forming the opinion, from the very start, that Herr Dühring is here speaking of things of which he knows remarkably little. This opinion becomes absolute certainty when the reader reaches his suggestion that in the science of organic beings (biology) the term composition should be used instead of development. The person who can put forward such a suggestion shows that he has not the faintest suspicion of the formation of organic bodies.

All organic bodies, except the very lowest, consist of cells, small granules of albumen which are only visible when considerably magnified, with a nucleus inside. As a rule the cells also develop an outer membrane and the contents are then more or less fluid. The lowest cellular bodies consist of a *single* cell; the immense majority of organic beings are multi-cellular, congruous complexes of many cells which in lower organisms remain of a homogeneous type, but in higher organisms develop more and more varied forms, groupings and functions. In the human body, for example, bones, muscles, nerves, tendons, ligaments, cartilages, skin, in a word, all tissues are either composed of cells or originated from them. But in all organic cellular structures, from the amoeba, which is a simple and most of the time skinless albuminous particle with a nucleus inside, up to man, and from the tiniest unicellular Desmidiaceae up to the most highly developed plant, the manner in which the cells multiply is the same: by fission. The cell nucleus first becomes constricted in the middle, the constriction separating the two halves of the nucleus gets more and more pronounced, and at last they separate from each other and form

two cell nuclei. The same process takes place in the cell itself; each of the two nuclei becomes the centre of an accumulation of cellular substance, linked to the other by a strip which is steadily growing narrower, until at last the two separate from each other and continue to exist as independent cells. Through such repeated cell fission the whole animal is gradually developed in full out of the embryonal vesicle of the animal egg, after it has been fertilized, and the replacement of used-up tissues is effected in the same way in the adult animal. To call such a process composition, and to say that to describe it as development is "pure imagination," certainly indicates a person who—however difficult this may be to believe at the present day—knows absolutely nothing of this process; here it is precisely and *exclusively* development that is going on, and indeed development in the most literal sense, and composition has absolutely nothing to do with it!

Later on we shall have something more to say about what Herr Dühring understands in general by life. In particular his conception of life is as follows: "The inorganic world too is a system of self-executing movements; but it is only at the point where there begins real differentiation, with the circulation of substances through special channels from one internal point and according to a germ-scheme transmissible to a smaller structure, that we may venture to speak of real life in the narrower and stricter sense."

This sentence is, in the narrower and stricter sense, a system of self-executing movements (whatever sort of things these may be) of nonsense, even apart from its hopelessly confused grammar. If life first begins where real differentiation commences, we must declare that the whole Haeckelian kingdom of protista and perhaps much else are dead, depending on the meaning we attach to the

idea of differentiation. If life first begins when this differentiation can be transmitted through a smaller germ-scheme, then at least all organisms up to and including unicellular ones cannot be regarded as living. If the circulation of substances through special channels is the hall-mark of life, then, in addition to the foregoing, we must also strike from the ranks of the living the whole of the higher class of the Coelenterata (excepting however the Medusae), that is, all polyps and other plant-animals. If the circulation of substances through special channels from one internal point is the essential hall-mark of life, then we must declare that all those animals which have no heart and those which have more than one heart are dead. Under this heading would fall, in addition to those already enumerated, all worms, starfish and rotifers (Annuloida and Annulosa, Huxley's classification), a section of the Crustacea (lobsters), and finally even a vertebrate animal, the Amphioxus. And moreover all plants.

In undertaking, therefore, to define real life in the narrower and stricter sense, Herr Dühring gives us four characteristics of life which totally contradict one another, one of which condemns to eternal death not only the whole vegetable kingdom but also about half the animal kingdom. Really no one can say that he misled us when he promised us "from the ground up original conclusions and views"!

Another passage runs: "In nature, too, one simple type is the basis of all organisms, from the lowest to the highest," and this type is "fully and completely present in its general essence even in the most subordinate impulse of the most undeveloped plant." This statement is again "full and complete" nonsense. The most simple type found in the whole of organic nature is the cell; and it certainly is the basis of the higher organisms. On the

other hand, among the lowest organisms there are many which are far below the cell—the protamoeba, a simple albuminous particle without any differentiation whatever, and a whole series of other monera and all bladder seaweeds (Siphoneae). All of these are linked with the higher organisms only by the fact that their essential component is albumen and that they consequently perform functions of albumen, i.e., live and die.

Herr Dühring further tells us: "Physiologically, sensation is bound up with the presence of some kind of nerve apparatus, however simple. It is therefore characteristic of all animal structures that they are capable of sensation, i.e., of a subjectively conscious awareness of their states. The sharp boundary line between plant and animal lies at the point where the leap to sensation takes place. Far from being obliterated by the known transitional structures, that line becomes a logical necessity precisely through these externally undecided or undecidable forms." And again: "On the other hand, plants are completely and for all time devoid of the slightest trace of sensation, and even lack any capacity for it."

In the first place, Hegel says (*Naturphilosophie* § 351, Zusatz[1]) that "sensation is the *differentia specifica*, the absolute distinguishing characteristic of the animal." So once again we find a Hegelian "crudity," which through the simple process of appropriation by Herr Dühring is raised to the honourable position of a final and ultimate truth.

In the second place, we hear for the first time here of transitional structures, externally undecided or undecidable forms (fine gibberish!) between plant and animal. That these intermediate forms exist; that there are organisms of which we cannot say flatly whether they are

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[1] *Philosophy of Nature*, § 351, Addendum.—*Ed.*

plants or animals; that therefore we are wholly unable to draw a sharp dividing line between plant and animal —precisely this fact makes it a logical necessity for Herr Dühring to establish a criterion of differentiation which in the same breath he admits will not hold water! But we have absolutely no need to go back to the doubtful territory between plants and animals; are the sensitive plants which at the slightest touch fold their leaves or close their flowers, are the insect-eating plants devoid of the slightest trace of sensation and do they even lack any capacity for it? This cannot be maintained even by Herr Dühring without "unscientific semi-poetry."

In the third place, it is once again a free creation and imagination on Herr Dühring's part when he asserts that sensation is physiologically bound up with the presence of some kind of nerve apparatus, however simple. Not only all primitive animals, but also the plant-animals, or at any rate the great majority of them, show no trace of a nerve apparatus. It is only from the worms on that such an apparatus is regularly found, and Herr Dühring is the first person to make the assertion that those animals have no sensation because they have no nerves. Sensation is not necessarily associated with nerves, but undoubtedly with certain albuminous bodies which up to now have not been more precisely determined.

At any rate, Herr Dühring's biological knowledge is sufficiently characterized by the question which he does not hesitate to put to Darwin: "Is it to be supposed that animals have developed out of plants?" Such a question could only be put by a person who has not the slightest knowledge of either animals or plants.

Of life in general Herr Dühring is only able to tell us: "The metabolism which is carried out through a plastically creating schematization (what in the world can

that be?) remains always a distinguishing characteristic of the real life process."

That is all we learn about life, while in the "plastically creating schematization" we are left knee-deep in the meaningless gibberish of the purest Dühring jargon. If therefore we want to know what life is, we shall evidently have to look a little more closely at it ourselves.

That organic exchange of matter is the most general and most characteristic phenomenon of life has been said times out of number during the last thirty years by physiological chemists and chemical physiologists, and it is here merely translated by Herr Dühring into his own elegant and clear language. But to define life as organic exchange of matter is to define life as—life; for organic exchange of matter or metabolism with plastically creating schematization is in fact a phrase which itself needs explanation through life, explanation through the distinction between the organic and the inorganic, that is, that which lives and that which does not live. This explanation therefore does not get us any further.

Exchange of matter as such takes place even without life. There is a whole series of processes in chemistry which, given an adequate supply of raw material, constantly reproduce their own conditions, and do so in such a way that a definite body is the carrier of the process. This is the case in the manufacture of sulphuric acid by the burning of sulphur. In this process sulphur dioxide, SO_2, is produced, and when steam and nitric acid are added, the sulphur dioxide absorbs hydrogen and oxygen and is converted into sulphuric acid, H_2SO_4. The nitric acid gives off oxygen and is reduced to nitric oxide; this nitric oxide immediately absorbs new oxygen from the air and is transformed into the higher oxides of nitrogen, but only to transfer this oxygen immediately to sulphur

dioxide and to go through the same process again; so that theoretically an infinitely small quantity of nitric acid should suffice to change an unlimited quantity of sulphur dioxide, oxygen and water into sulphuric acid.

Exchange of matter also takes place in the passage of fluids through dead organic and even through inorganic membranes, as in Traube's artificial cells. Here too it is clear that we cannot get any further by means of exchange of matter; for the peculiar exchange of matter which is to explain life needs itself to be explained through life. We must therefore try some other way.

Life is the mode of existence of albuminous bodies, and this mode of existence essentially consists in the constant self-renewal of the chemical constituents of these bodies.

The term albuminous body is used here in the sense in which it is employed in modern chemistry, which includes under this name all bodies constituted similarly to ordinary white of egg, otherwise also known as protein substances. The name is an unhappy one, because ordinary white of egg plays the most lifeless and passive role of all the substances related to it, since, together with the yolk, it is merely food for the developing embryo. But while so little is yet known of the chemical composition of albuminous bodies, this name is better than any other because it is more general.

Wherever we find life we find it associated with an albuminous body, and wherever we find an albuminous body not in process of dissolution, there also without exception we find phenomena of life. Undoubtedly, the presence of other chemical combinations is also necessary in a living body in order to induce particular differentiations of these phenomena of life; but they are not requisite for naked life, except in so far as they enter the body as food and are transformed into albumen. The lowest

living beings known to us are in fact nothing but simple particles of albumen, and they already exhibit all the essential phenomena of life.

But what are these universal phenomena of life which are equally present among all living organisms? Above all the fact that an albuminous body absorbs other appropriate substances from its environment and assimilates them, while other, older parts of the body disintegrate and are excreted. Other, non-living, bodies also change, disintegrate or enter into combinations in the natural course of events; but in doing this they cease to be what they were. A weather-worn rock is no longer a rock; metal which oxidizes turns into rust. But what with non-living bodies is the cause of destruction, with albumen is *the fundamental condition of existence.* From the moment when this uninterrupted metamorphosis of its constituents, this constant alternation of nutrition and excretion, no longer takes place in an albuminous body, the albuminous body itself comes to an end, it decomposes, that is, *dies.* Life, the mode of existence of an albuminous body, therefore consists primarily in the fact that every moment it is itself and at the same time something else; and this does not take place as the result of a process to which it is subjected from without, as is the way in which this can occur also in the case of inanimate bodies. On the contrary, life, the exchange of matter which takes place through nutrition and excretion, is a self-implementing process which is inherent in, native to, its bearer, albumen, without which the latter cannot exist. And hence it follows that if chemistry ever succeeds in producing albumen artificially, this albumen must show the phenomena of life, however weak these may be. It is certainly open to question whether chemistry will at the same time also discover the right food for this albumen.

From the exchange of matter, which takes place through nutrition and excretion, as the essential function of albumen and from its peculiar plasticity proceed also all the other most simple factors of life: irritability, which is already included in the mutual interaction between the albumen and its food; contractibility, which is shown, even at a very low stage, in the consumption of food; the possibility of growth, which in the lowest forms includes propagation by fission; internal movement, without which neither the consumption nor the assimilation of food is possible.

Our definition of life is naturally very inadequate, inasmuch as, far from including *all* the phenomena of life, it has to be limited to those which are the most common and the simplest. From a scientific standpoint all definitions are of little value. In order to gain an exhaustive knowledge of what life is, we should have to go through all the forms in which it appears, from the lowest to the highest. But for ordinary usage such definitions are very convenient and in places cannot well be dispensed with; moreover, they can do no harm, provided their inevitable deficiencies are not forgotten.

But back to Herr Dühring. When things are faring badly with him in the sphere of earthly biology, he knows where to find consolation; he takes refuge in his starry heaven.

"It is not merely the special apparatus of an organ of sensation, but the whole objective world, which is adapted to the production of pleasure and pain. For this reason we take it for granted that the antithesis between pleasure and pain, and moreover *exactly* in the form with which we are familiar, is a universal antithesis, and must be represented *in the various worlds of the universe* by essentially homogeneous feelings.... This conformity, however, is of *no little* significance, for it is the key to

the *universe of sensations*.... Hence the subjective cosmic world is to us not much more unfamiliar than the objective. The constitution of both spheres must be conceived according to one concordant type, and in this we have the beginnings of a science of consciousness whose range is wider than merely terrestrial."

What do a few gross blunders in terrestrial natural science matter to the man who carries in his pocket the key to the universe of sensations? *Allons donc!*

IX

MORALITY AND LAW. ETERNAL TRUTHS

We refrain from giving samples of the mish-mash of platitudes and oracular sayings, in a word, of the simple *balderdash* with which Herr Dühring regales his readers for fifty full pages as the deep-rooted science of the elements of consciousness. We will cite only this: "He who can think only by means of language has never yet learnt what is meant by *abstract* and *pure* thought." On this basis animals are the most abstract and purest thinkers, because their thought is never obscured by the officious intrusion of language. In any case one can see from the Dühringian thoughts and the language in which they are couched how little suited these thoughts are to any language, and how little suited the German language is to these thoughts.

At last the fourth section brings us deliverance; apart from the liquefying pap of rhetoric, it does at least offer us, here and there, something tangible on the subject of *morality* and *law*. Right at the outset, on this occasion, we are invited to take a trip to the other celestial bodies: the elements of morals "must occur in concordant fashion among all extra-human beings whose active reason has to deal with the conscious ordering of life impulses in the form of instincts.... And yet our interest in such deductions will be small.... Nevertheless it is an idea which *beneficently extends* our range of vision, when we think that on other celestial bodies individual and communal life must be based on a scheme which ... is unable to

abrogate or escape from the general fundamental constitution of a rationally acting being."

In this case, by way of exception, the validity of the Dühringian truths also for all other possible worlds is put at the beginning instead of the end of the chapter concerned; and for a sufficient reason. If the validity of the Dühringian conceptions of morality and justice is first established for all *worlds,* it is all the more easy beneficently to extend their validity to all *times.* But once again what is involved is nothing less than final and ultimate truth. The world of morals, "just as much as the world of general knowledge," has . . . "its permanent principles and simple elements." The moral principles stand "above history and also above the present differences in national characteristics. . . . The special truths out of which, in the course of evolution, a more complete moral consciousness and, so to speak, conscience are built up, may, in so far as their ultimate basis is understood, claim a validity and range similar to the theorems and applications of mathematics. *Genuine truths are absolutely immutable* . . . so that it is altogether stupid to think that the correctness of knowledge is something that can be affected by time and changes in reality." Hence the certitude of strict knowledge and the adequacy of common cognition leave no room, when we are in possession of our senses, for doubting the absolute validity of the principles of knowledge. "Even persistent doubt is itself a diseased condition of weakness and only the expression of *hopeless confusion,* which sometimes seeks to contrive the appearance of something stable in the systematic consciousness of its *nothingness.* In the sphere of ethics, the denial of general principles clutches at the geographical and historical variety of customs and principles, and once the inevitable necessity of moral wickedness and evil is conceded, it believes itself so much the more to be

above the recognition of the great importance and actual efficacy of concordant moral impulses. This *mordant scepticism*, which is not directed against particular false doctrines but against mankind's very capacity to develop conscious morality, resolves itself ultimately into a real Nothing, in fact into something that is worse than pure nihilism.... It flatters itself that it can easily dominate within its *utter chaos* of disintegrated ethical ideas and open the gates to unprincipled arbitrariness. But it is greatly mistaken: for mere reference to the inevitable fate of reason in error and truth suffices to show by this analogy alone that natural fallibility does not necessarily exclude the attainment of accuracy."

Up to now we have calmly put up with all these pompous phrases of Herr Dühring's about final and ultimate truths, the sovereignty of thought, absolute certainty of knowledge, and so forth, because it is only at the point which we have now reached that the matter can be brought to a head. Up to this point it has been enough to enquire how far the separate assertions of the philosophy of reality had "sovereign validity" and "an unconditional claim to truth"; now we come to the question whether any, and if so which, products of human knowledge ever can have sovereign validity and an unconditional claim to truth. When I say "of *human* knowledge" I do not use the phrase with the intention of insulting the inhabitants of other celestial bodies, whom I have not had the honour of knowing, but only for the reason that animals also have knowledge, though it is in no way sovereign. A dog acknowledges his master to be his God, though this master may be the biggest scoundrel on earth.

Is human thought sovereign? Before we can answer yes or no we must first enquire: what is human thought? Is it the thought of the individual man? No. But it exists only as the individual thought of many milliards of past,

present and future men. If, then, I say that the total thought of all these human beings, including the future ones, which is embraced in my idea, is *sovereign*, able to know the world as it exists, if only mankind lasts long enough and in so far as no limits are imposed on its knowledge by its perceptive organs or the objects to be known, then I am saying something which is pretty banal and, in addition, pretty barren. For the most valuable result from it would be that it should make us extremely distrustful of our present knowledge, inasmuch as in all probability we are just about at the beginning of human history, and the generations which will put *us* right are likely to be far more numerous than those whose knowledge we—often enough with a considerable degree of contempt—have the opportunity to correct.

Herr Dühring himself proclaims it to be a necessity that consciousness, and therefore also thought and knowledge, can become manifest only in a series of individual beings. We can only ascribe sovereignty to the thought of each of these individuals in so far as we are not aware of any power which would be able to impose any idea forcibly on him, when he is of sound mind and wide awake. But as for the sovereign validity of the knowledge obtained by each individual thought, we all know that there can be no talk of such a thing, and that all previous experience shows that without exception such knowledge always contains much more that is capable of being improved upon than that which cannot be improved upon, or is correct.

In other words, the sovereignty of thought is realized in a series of extremely unsovereignly-thinking human beings; the knowledge which has an unconditional claim to truth is realized in a series of relative errors; neither the one nor the other can be fully realized except through an unending duration of human existence.

Here once again we find the same contradiction as we found above, between the character of human thought, necessarily conceived as absolute, and its reality in individual human beings, all of whom think only limitedly. This is a contradiction which can be resolved only in the course of infinite progress, in what is—at least practically for us—an endless succession of generations of mankind. In this sense human thought is just as much sovereign as not sovereign, and its capacity for knowledge just as much unlimited as limited. It is sovereign and unlimited in its disposition, its vocation, its possibilities and its historical ultimate goal; it is not sovereign and it is limited in its individual realization and in reality at any particular moment.

It is just the same with eternal truths. If mankind ever reached the stage at which it should work only with eternal truths, with results of thought which possess sovereign validity and an unconditional claim to truth, it would then have reached the point where the infinity of the intellectual world both in its actuality and in its potentiality had been exhausted, and thus the famous miracle of the counted uncountable would have been performed.

But in spite of all this, are there any truths which are so securely based that any doubt of them seems to us to be tantamount to insanity? That twice two makes four, that the three angles of a triangle are equal to two right angles, that Paris is in France, that a man who gets no food dies of hunger, and so forth? Are there then nevertheless *eternal* truths, final and ultimate truths?

Certainly there are. We can divide the whole realm of knowledge in the traditional way into three great departments. The first includes all sciences that deal with inanimate nature and are to a greater or lesser degree susceptible of mathematical treatment: mathematics, astronomy, mechanics, physics, chemistry. If it gives any-

one any pleasure to use mighty words for very simple things, it can be asserted that *certain* results obtained by these sciences are eternal truths, final and ultimate truths; for which reason these sciences are known as the *exact* sciences. But very far from all their results have this validity. With the introduction of variable magnitudes and the extension of their variability to the infinitely small and infinitely large, mathematics, usually so strictly ethical, fell from grace; it ate of the tree of knowledge, which opened up to it a career of most colossal achievements, but at the same time a path of error. The virgin state of absolute validity and irrefutable proof of everything mathematical was gone for ever; the realm of controversy was inaugurated, and we have reached the point where most people differentiate and integrate not because they understand what they are doing but from pure faith, because up to now it has always come out right. Things are even worse with astronomy and mechanics, and in physics and chemistry we are swamped by hypotheses as if attacked by a swarm of bees. And it must of necessity be so. In physics we are dealing with the motion of molecules, in chemistry with the formation of molecules out of atoms, and if the interference of light waves is not a myth, we have absolutely no prospect of ever seeing these interesting objects with our own eyes. As time goes on, final and ultimate truths become remarkably rare in this field.

We are even worse off in geology, which by its nature has to deal chiefly with processes which took place not only in our absence but in the absence of any human being whatever. The gleaning here of final and ultimate truths is therefore a very troublesome business, and the crop is extremely scanty.

The second department of science is the one which covers the investigation of living organisms. In this field

there is such a multiplicity of interrelationships and causalities that not only does the solution of each question give rise to a host of other questions, but each separate problem can in most cases only be solved piecemeal, through a series of investigations which often require centuries; and besides, the need for a systematic presentation of interconnections makes it necessary again and again to surround the final and ultimate truths with a luxuriant growth of hypotheses. What a long series of intermediaries from Galen to Malpighi was necessary for correctly establishing such a simple matter as the circulation of the blood in mammals, how slight is our knowledge of the origin of blood corpuscles, and how numerous are the missing links even today, for example, to be able to bring the symptoms of a disease into some rational relationship with its causes! And often enough discoveries, such as that of the cell, are made which compel us to revise completely all formerly established final and ultimate truths in the realm of biology, and to put whole piles of them on the scrap-heap once and for all. Anyone who wants to establish really genuine and immutable truths here will therefore have to be content with such platitudes as: all men are mortal, all female mammals have lacteal glands, and the like; he will not even be able to assert that the higher animals digest with their stomachs and intestines and not with their heads, for the nervous activity, which is centralized in the head, is indispensable to digestion.

But eternal truths are in an even worse plight in the third, the historical group of sciences. The subjects investigated by these, in their historical sequence and in their present resultant state, are the conditions of human life, social relationships, forms of law and government, with their ideological superstructure in the shape of philosophy, religion, art, etc. In organic nature we are at

least dealing with a succession of processes which, so far as our immediate observation is concerned, recur with fair regularity within very wide limits. Organic species have on the whole remained unchanged since the time of Aristotle. In social history, however, the repetition of conditions is the exception and not the rule, once we pass beyond the primitive state of man, the so-called Stone Age; and when such repetitions occur, they never arise under exactly similar circumstances. Such, for example, is the existence of an original common ownership of the land among all civilized peoples, or the way it was dissolved. In the sphere of human history our knowledge is therefore even more backward than in the realm of biology. Furthermore, when by way of exception the inner connection between the social and political forms of existence in any epoch come to be known, this as a rule occurs only when these forms have already by half outlived themselves and are nearing extinction. Therefore, knowledge is here essentially relative, inasmuch as it is limited to the investigation of interconnections and consequences of certain social and state forms which exist only in a particular epoch and among particular peoples and are by their very nature transitory. Anyone therefore who here sets out to hunt down final and ultimate truths, genuine, absolutely immutable truths, will bring home but little, apart from platitudes and commonplaces of the sorriest kind—for example, that, generally speaking, men cannot live except by labour; that up to the present they for the most part have been divided into rulers and ruled; that Napoleon died on May 5, 1821, and so on.

Now it is a remarkable thing that it is precisely in this sphere that we most frequently encounter truths which claim to be eternal, final and ultimate and all the rest of it. That twice two makes four, that birds have beaks, and similar statements, are proclaimed as eternal

truths only by those who aim at deducing, from the existence of eternal truths in general, the conclusion that there are also eternal truths in the sphere of human history—eternal morality, eternal justice, and so on—which claim a validity and scope similar to those of the theorems and applications of mathematics. And then we can confidently rely on this same friend of humanity taking the first opportunity to assure us that all previous fabricators of eternal truths have been to a greater or lesser extent asses and charlatans, that they all fell into error and made mistakes; but that *their* error and *their* fallibility are in accordance with nature's laws, and prove the existence of truth and accuracy precisely in *his* case; and that he, the prophet who has now arisen, has in his bag, all ready-made, final and ultimate truth, eternal morality and eternal justice. This has all happened so many hundreds and thousands of times that we can only feel astonished that there should still be people credulous enough to believe this, not of others, oh no! but of themselves. Nevertheless we have here before us at least one more such prophet, who also, quite in the accustomed way, flies into highly moral indignation when other people deny that any individual whatsoever is in a position to deliver the final and ultimate truth. Such a denial, or indeed mere doubt of it, is weakness, hopeless confusion, nothingness, mordant scepticism, worse than pure nihilism, utter chaos and other such pleasantries. As with all prophets, instead of critical and scientific examination and judgment one encounters moral condemnation out of hand.

We might have made mention above also of the sciences which investigate the laws of human thought, i.e., logic and dialectics. In these, however, eternal truths do not fare any better. Herr Dühring declares that dialectics proper is pure nonsense; and the many books which have been and are still being written on logic provide abun-

dant proof that here, too, final and ultimate truths are much more sparsely sown than some people believe.

For that matter, there is absolutely no need to be alarmed at the fact that the stage of knowledge which we have now reached is as little final as all that have preceded it. It already embraces a vast mass of judgments and requires very great specialization of study on the part of anyone who wants to become conversant with any particular science. But a man who applies the measure of genuine, immutable, final and ultimate truth to knowledge which, by its very nature, must either remain relative for many generations and be completed only step by step, or which, as in cosmogony, geology and the history of man, must always contain gaps and be incomplete because of the inadequacy of the historical material—such a man only proves thereby his own ignorance and perversity, even if the real thing behind it all is not, as in this case, the claim to personal infallibility. Truth and error, like all thought-concepts which move in polar opposites, have absolute validity only in an extremely limited field, as we have just seen, and as even Herr Dühring would realize if he had any acquaintance with the first elements of dialectics, which deal precisely with the inadequacy of all polar opposites. As soon as we apply the antithesis between truth and error outside of that narrow field which has been referred to above it becomes relative and therefore unserviceable for exact scientific modes of expression; and if we attempt to apply it as absolutely valid outside that field we really find ourselves altogether beaten: both poles of the antithesis become transformed into their opposites, truth becomes error and error truth. Let us take as an example the well-known Boyle's law. According to it, if the temperature remains constant, the volume of a gas varies inversely with the pressure to which it is subjected. Regnault found that this law does

not hold good in certain cases. Had he been a philosopher of reality he would have had to say: Boyle's law is mutable, and is hence not a genuine truth, hence it is not a truth at all, hence it is an error. But had he done this he would have committed an error far greater than the one that was contained in Boyle's law; his grain of truth would have been lost sight of in a sand-hill of error; he would have distorted his originally correct conclusion into an error compared with which Boyle's law, along with the little particle of error that clings to it, would have seemed like truth. But Regnault, being a man of science, did not indulge in such childishness, but continued his investigations and discovered that in general Boyle's law is only approximately true, and in particular loses its validity in the case of gases which can be liquefied by pressure, namely, as soon as the pressure approaches the point at which liquefaction begins. Boyle's law therefore was proved to be true only within definite limits. But is it absolutely and finally true within those limits? No physicist would assert that. He would maintain that it holds good within certain limits of pressure and temperature and for certain gases; and even within these more restricted limits he would not exclude the possibility of a still narrower limitation or altered formulation as the result of future investigations.[1] This is how things

[1] Since I wrote the above it would seem already to have been confirmed. According to the latest researches carried out with more exact apparatus by Mendeleyev and Bogusky, all true gases show a variable relation between pressure and volume; the coefficient of expansion for hydrogen, at all the pressures so far applied, has been positive (that is, the diminution of volume was slower than the increase of pressure); in the case of atmospheric air and the other gases examined, there is for each a zero point of pressure, so that with pressure below this point their coefficients are positive, and with pressure above this point their coefficients are negative. So Boyle's law, which has always hitherto been usable for prac-

stand with final and ultimate truths in physics, for example. Really scientific works therefore, as a rule, avoid such dogmatically moral expressions as error and truth, while these expressions meet us everywhere in works such as the philosophy of reality, in which empty phrase-mongering attempts to impose itself on us as the most sovereign result of sovereign thought.

But, a naive reader may ask, where has Herr Dühring expressly stated that the content of his philosophy of reality is final and even ultimate truth? Where? Well, for example, in the dithyramb on his system (page 13), a part of which we cited in chapter II. Or when he says, in the passage quoted above: Moral truths, in so far as their ultimate bases are understood, claim the same validity as mathematical theorems. And does not Herr Dühring assert that, working from his really critical standpoint and by means of those researches of his which go to the root of things, he has forced his way through to these ultimate foundations, the basic schemata, and has thus bestowed final and ultimate validity on moral truths? Or, if Herr Dühring does not advance this claim either for himself or for his age, if he only meant to say that perhaps some day in the dark and nebulous future final and ultimate truths may be ascertained, if therefore he meant to say much the same, only in a more confused way, as is said by "mordant scepticism" and "hopeless confusion"—then, in that case, what is all the noise about, what can we do for you, Herr Dühring?

If, then, we have not made much progress with truth and error, we can make even less with good and evil. This opposition manifests itself exclusively in the do-

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tical purposes, will have to be supplemented by a whole series of special laws. (We also know now—in 1885—that there are no "true" gases at all. They have all been reduced to a liquid form.) [*Note by Engels.*]

main of morals, that is, a domain belonging to the history of mankind, and it is precisely in this field that final and ultimate truths are most sparsely sown. The conceptions of good and evil have varied so much from nation to nation and from age to age that they have often been in direct contradiction to each other.

But all the same, someone may object, good is not evil and evil is not good; if good is confused with evil there is an end to all morality, and everyone can do as he pleases. This is also, stripped of all oracular phrases, Herr Dühring's opinion. But the matter cannot be so simply disposed of. If it were such an easy business there would certainly be no dispute at all over good and evil; everyone would know what was good and what was bad. But how do things stand today? What morality is preached to us today? There is first Christian-feudal morality, inherited from earlier religious times; and this is divided, essentially, into a Catholic and a Protestant morality, each of which has no lack of subdivisions, from the Jesuit-Catholic and Orthodox-Protestant to loose "enlightened" moralities. Alongside these we find the modern-bourgeois morality and beside it also the proletarian morality of the future, so that in the most advanced European countries alone the past, present and future provide three great groups of moral theories which are in force simultaneously and alongside each other. Which, then, is the true one? Not one of them, in the sense of absolute finality; but certainly that morality contains the maximum elements promising permanence which, in the present, represents the overthrow of the present, represents the future, and that is proletarian morality.

But when we see that the three classes of modern society, the feudal aristocracy, the bourgeoisie and the proletariat, each have a morality of their own, we can only draw the one conclusion: that men, consciously or unconscious-

ly, derive their ethical ideas in the last resort from the practical relations on which their class position is based —from the economic relations in which they carry on production and exchange.

But nevertheless there is quite a lot which the three moral theories mentioned above have in common—is this not at least a portion of a morality which is fixed once and for all? These moral theories represent three different stages of the same historical development, have therefore a common historical background, and for that reason alone they necessarily have much in common. Even more. At similar or approximately similar stages of economic development moral theories must of necessity be more or less in agreement. From the moment when private ownership of movable property developed, all societies in which this private ownership existed had to have this moral injunction in common: Thou shalt not steal. Does this injunction thereby become an eternal moral injunction? By no means. In a society in which all motives for stealing have been done away with, in which therefore at the very most only lunatics would ever steal, how the preacher of morals would be laughed at who tried solemnly to proclaim the eternal truth: Thou shalt not steal!

We therefore reject every attempt to impose on us any moral dogma whatsoever as an eternal, ultimate and for ever immutable ethical law on the pretext that the moral world, too, has its permanent principles which stand above history and the differences between nations. We maintain on the contrary that all moral theories have been hitherto the product, in the last analysis, of the economic conditions of society obtaining at the time. And as society has hitherto moved in class antagonisms, morality has always been class morality; it has either justified the domination and the interests of the ruling class, or, ever since the oppressed class became powerful

enough, it has represented its indignation against this domination and the future interests of the oppressed. That in this process there has on the whole been progress in morality, as in all other branches of human knowledge, no one will doubt. But we have not yet passed beyond class morality. A really human morality which stands above class antagonisms and above any recollection of them becomes possible only at a stage of society which has not only overcome class antagonisms but has even forgotten them in practical life. And now one can gauge Herr Dühring's presumption in advancing his claim, from the midst of the old class society and on the eve of a social revolution, to impose on the future classless society an eternal morality independent of time and changes in reality. Even assuming—what we do not know up to now—that he understands the structure of the society of the future at least in its main outlines.

Finally, one more revelation which is "from the ground up original" but for that reason no less "going to the root of things." With regard to the origin of evil, "the fact that the *type of the cat* with the guile associated with it is found in animal form, stands on an even plane with the circumstance that a similar type of character is found also in human beings.... There is therefore nothing mysterious about evil, unless someone wants to scent out something mysterious in the existence of a *cat* or of any animal of prey." Evil is—the cat. The devil therefore has no horns or cloven hoof, but claws and green eyes. And Goethe committed an unpardonable error in presenting Mephistopheles as a black dog instead of a black cat. Evil is the cat! That is morality, not only for all worlds, but also—for cats![1]

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[1] In German a play on words: *für die Katze* (for the cat) denotes something utterly useless or wasted effort.—*Ed.*

X

MORALITY AND LAW. EQUALITY

We have already had more than one occasion to make ourselves acquainted with Herr Dühring's method. It consists in dissecting each group of objects of knowledge to what is claimed to be their simplest elements, applying to these elements similarly simple and what are claimed to be self-evident axioms, and then continuing to operate with the aid of the results so obtained. Even a problem in the sphere of social life "is to be decided axiomatically, in accordance with particular, simple basic forms, just as if we were dealing with the simple ... basic forms of mathematics." And thus the application of the mathematical method to history, morals and law is to give us also in these fields mathematical certainty of the truth of the results obtained, to characterize them as genuine, immutable truths.

This is only giving a new twist to the old favourite ideological method, also known as the *a priori* method, which consists in ascertaining the properties of an object by logical deduction from the concept of the object, instead of from the object itself. First the concept of the object is fabricated from the object; then the spit is turned round, and the object is measured by its image, the concept. The object is then to conform to the concept, not the concept to the object. With Herr Dühring the simplest elements, the ultimate abstractions he can reach, do service for the concept, which does not alter

matters; these simplest elements are at best of a purely conceptual nature. The philosophy of reality, therefore, proves here again to be pure ideology, the deduction of reality not from itself but from a concept.

And when such an ideologist constructs morality and law from the concept, or the so-called simplest elements of "society," instead of from the real social relations of the people round him, what material is then available for this construction? Material clearly of two kinds: first, the meagre residue of real content which may possibly survive in the abstractions from which he starts and, secondly, the content which our ideologist once more introduces from his own consciousness. And what does he find in his consciousness? For the most part, moral and juridical notions which are a more or less accurate expression (positive or negative, corroborative or antagonistic) of the social and political relations amidst which he lives; perhaps also ideas drawn from the literature on the subject; and, as a final possibility, some personal idiosyncrasies. Our ideologist may turn and twist as he likes, but the historical reality which he cast out at the door comes in again at the window, and while he thinks he is framing a doctrine of morals and law for all times and for all worlds, he is in fact only fashioning an image of the conservative or revolutionary tendencies of his day —an image which is distorted because it has been torn from its real basis and, like a reflection in a concave mirror, is standing on its head.

Herr Dühring thus dissects society into its simplest elements, and discovers in doing so that the simplest society consists of at least *two* people. With these two people he then proceeds to operate axiomatically. And so the basic moral axiom naturally presents itself: "Two human wills are as such *entirely equal* to each other, and in the first place the one can demand nothing positive of

the other." This "characterizes the basic form of moral justice," and also that of legal justice, for "we need only the wholly simple and elementary relation of *two persons* for the development of the fundamental concepts of right."

That two people or two human wills are as such *entirely* equal to each other is not only not an axiom but is even a great exaggeration. In the first place, two people, even as such, may be unequal in sex, and this simple fact leads us on at once to the idea that the simplest elements of society—if we enter into this childishness for a moment—are not two men, but a man and a woman, who found a *family*, the simplest and first form of association for the purpose of production. But this cannot in any way suit Herr Dühring. For on the one hand the two founders of society must be made as equal as possible; and secondly even Herr Dühring could not succeed in constructing from the primitive family the moral and legal equality of man and woman. One thing or the other: either the Dühringian social molecule, by the multiplication of which the whole of society is to be built up, is doomed beforehand to disaster, because two men can never by themselves bring a child into the world; or we must conceive them as two heads of families. And in that case the whole simple basic scheme is turned into its opposite: instead of the equality of people it proves at most the equality of heads of families, and as women are not considered, it further proves that they are subordinate.

We have now to make an unpleasant announcement to the reader: that from this point on for some considerable time he will not get rid of these famous two men. In the sphere of social relations they play a similar role to that hitherto played by the inhabitants of other celestial bodies, with whom it is to be hoped we have now finished.

Whenever a question of economics, politics, etc., is to be solved, the two men instantly march up and settle the matter in the twinkling of an eye, "axiomatically." An excellent, creative and system-creating discovery on the part of our philosopher of reality. But unfortunately, if we want to pay due regard to truth, the two men are not his discovery. They are the common property of the whole eighteenth century. They are already to be found in Rousseau's discourse on inequality (1754), where, by the way, they prove axiomatically the opposite of Herr Dühring's contentions. They play a leading part with the economists, from Adam Smith to Ricardo; but in these they are at least unequal in that each of the two carries on a different trade—as a rule one is a hunter and the other a fisherman—and that they mutually exchange their products. Besides, throughout the eighteenth century, they serve in the main as a purely illustrative example, and Herr Dühring's originality consists only in that he elevates this method of illustration into a basic method for all social science and a measure of all historical forms. Certainly it would be impossible to simplify further the "strictly scientific conception of things and men."

In order to establish the fundamental axiom that two people and their wills are absolutely equal to each other and that neither lords it over the other, we cannot use any couple of men at random. They must be two people who are so thoroughly free from all reality, from all national, economic, political and religious relations which are found in the world, from all sexual and personal peculiarities, that nothing is left of either of them beyond the mere concept: human being, and then they are of course "entirely equal." They are therefore two complete phantoms conjured up by that very Herr Dühring who is everywhere scenting and denouncing "spiritistic" tendencies. These two phantoms are of course obliged to do

everything which the man who conjured them into existence wants them to do, and for that very reason all their artifices are of no interest whatever to the rest of the world.

But let us pursue Herr Dühring's axiomatics a little further. The two wills can demand nothing positive of each other. If nevertheless one of them does so, and has his way by force, this gives rise to a state of injustice; and this fundamental scheme serves Herr Dühring to explain injustice, tyranny, servitude—in short, the whole reprehensible history of the past. Now Rousseau, in the essay referred to above, had already made use of two men to prove, likewise axiomatically, the very opposite: that is, given two men, A cannot enslave B by force, but only by putting B into a position in which the latter cannot do without A, a conception which, however, is much too materialistic for Herr Dühring. Let us put the same thing in a slightly different way. Two shipwrecked people are alone on an island, and form a society. Their wills are, formally, entirely equal, and this is acknowledged by both. But from a material standpoint there is great inequality. A has determination and energy, B is irresolute, lazy and flabby. A is quick-witted, B stupid. How long will it be before A regularly imposes his will on B, first by persuasion, subsequently by dint of habit, but always in form voluntarily? Servitude remains servitude, whether the voluntary form is retained or is trampled underfoot. Voluntary entry into servitude was known throughout the Middle Ages, in Germany until after the Thirty Years' War. When serfdom was abolished in Prussia after the defeats of 1806 and 1807, and with it the obligation of the gracious lords to provide for their subjects in need, illness and old age, the peasants petitioned the king asking to be left in servitude—for otherwise who would look after them when in distress? The two-men scheme is

therefore just as "appropriate" to inequality and servitude as to equality and mutual help; and inasmuch as we are forced, on pain of extinction of society, to assume that they are heads of families, hereditary servitude is also provided for in the idea from the start.

But let this entire matter rest for the moment. Let us assume that Herr Dühring's axiomatics have convinced us and that we are enthusiastic supporters of the entire equality of rights as between the two wills, of "general human sovereignty," of the "sovereignty of the individual" —veritable verbal colossi, compared with whom Stirner's "Ego" together with his Own[1] is a mere dwarf, although he also could claim a modest part in them. Well, then, we are now all *entirely equal* and independent. All? No, not quite all. There are also cases of "permissible dependence," but these can be explained "on grounds which are to be sought not in the activity of the two wills as such, but in a third sphere, as for example in regard to children, in their inadequate self-determination."

Indeed! The grounds of dependence are not to be sought in the activity of the two wills as such! Naturally not, for the activity of one of the wills is actually restricted. But in a third sphere! And what is this third sphere? The concrete determination of one, the subjected, will as inadequate! Our philosopher of reality has so far departed from reality that, as against the abstract term "will," which is devoid of content, he regards the real content, the characteristic determination of this will, as a "third sphere." Be that as it may, we are obliged to state that the equality of rights has an exception. It does not hold good for a will afflicted with inadequate self-determination. *Retreat No. 1.*

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[1] Reference to Max Stirner's *Der Einzige und sein Eigentum* [*The Ego and His Own*], which Marx and Engels had subjected to withering criticism in *The German Ideology.—Ed.*

To proceed. "Where beast and man are blended in one person the question may be asked, on behalf of a second, entirely human, person, whether his mode of action should be the same as if persons who, so to speak, are only human were confronting each other; . . . our hypothesis of two morally unequal persons, one of whom in some sense or other has something of the real beast in his character, is therefore the typical basic form for all relations which, in accordance with this difference, may come about . . . within and between groups of people." And now let the reader see for himself the pitiful diatribe that follows these clumsy subterfuges, in which Herr Dühring turns and twists like a Jesuit priest in order to determine casuistically how far the human man can go against the bestial man, how far he may show distrust and employ stratagems and harsh, even terrorist means, as well as deception against him, without himself deviating in any way from immutable morality.

So, when two persons are "morally unequal," there again is no longer equality. But then it was surely not worth while to conjure up two entirely equal people, for there are no two persons who are morally entirely equal. But the inequality is supposed to consist in this: that one person is human and the other has a streak of the beast in him. It is, however, inherent in the descent of man from the animal world that he can never entirely rid himself of the beast, so that it can always be only a question of more or less, of a difference in the degree of bestiality or of humanity. A division of mankind into two sharply differentiated groups, into human men and beast men, into good and bad, sheep and goats, is only found—apart from the philosophy of reality—in Christianity, which quite logically also has its judge of the universe to make the separation. But who is to be the judge of the universe in the philosophy of reality? Presumably the

procedure will have to be the same as in Christian practice, in which the pious lambs themselves assume the office of judge of the universe in relation to their mundane goat-neighbours, and discharge this duty with notorious success. The sect of philosophers of reality, if it ever comes into being, will assuredly not yield precedence in this respect to the pious of the land. This, however, is of no concern to us; what interests us is the admission that, as a result of the moral inequality between men, equality has vanished once more. *Retreat No. 2.*

But, again, let us proceed. "If one acts in accordance with truth and science, and the other in accordance with some superstition or prejudice, then . . . as a rule mutual interference must occur. . . . At a certain degree of incompetence, brutality or perversity of character, conflict is always inevitable. . . . It is not only children and madmen in relation to whom the ultimate resource is *force.* The character of whole natural groups and cultured classes in mankind may make the *subjection* of their will, which is hostile because of its perversity, an inevitable necessity, in order to guide it back to the ties held in common. Even in such cases the alien will is still recognized as *having equal rights*; but the perversity of its injurious and hostile activity has provoked an *equalization*, and if it is subjected to force, it is only reaping the reaction to its own unrighteousness."

So not only moral but also mental inequality is enough to remove the "entire equality" of the two wills and to call into being a morality by which all the infamous deeds of civilized robber states against backward peoples, down to the Russian atrocities in Turkestan, can be justified. When in the summer of 1873, General Kaufman ordered the Tatar tribe of the Yomuds to be attacked, their tents to be burnt and their wives and children butchered—"in the good old Caucasian way," as the order was worded—

he, too, declared that the subjection of the hostile, because perverted, will of the Yomuds, with the object of guiding it back to the ties held in common, had become an inevitable necessity, that the means employed by him were best suited to the purpose, and that whoever willed the end must also will the means. Only he was not so cruel as to insult the Yomuds on top of it all and to say that it was just by massacring them for purposes of equalization that he was recognizing their will as having equal rights. And once again in this conflict it is the elect, those who claim to be acting in accordance with truth and science and therefore in the last resort the philosophers of reality, who have to decide what are superstition, prejudice, brutality and perversity of character and when force and subjection are necessary for purposes of equalization. Equality, therefore, is now—equalization by force; and the second will is recognized by the first to have equal rights through subjection. *Retreat No. 3*, here already degenerating into ignominious flight.

Incidentally, the phrase that the alien will is recognized as having equal rights precisely through equalization by means of force is only a distortion of the Hegelian theory, according to which punishment is the right of the criminal: "punishment is regarded as containing the criminal's right and hence by being punished he is honoured as a rational being." (*Rechtsphilosophie* § 100. Anmerk.)[1]

With that we can break off. It would be superfluous to follow Herr Dühring further in his piecemeal destruction of the equality which he set up so axiomatically, of his general human sovereignty and so on; to observe how he manages to set up society with his two men, but in order to create the state he requires a third because—

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[1] *Philosophy of Right*, §100, Note.—*Ed.*

to put the matter briefly—without a third no majority decisions can be arrived at, and without these, and so also without the rule of the majority over the minority, no state can exist; and then how he gradually steers into calmer waters where he constructs his socialitarian state of the future, where one fine morning we shall have the honour to look him up. We have sufficiently observed that the entire equality of the two wills exists only so long as these two wills *will nothing*; that as soon as they cease to be human wills as such, and are transformed into real, individual wills, into the wills of two real people, equality comes to an end; that childhood, madness, so-called bestiality, supposed superstition, alleged prejudice and assumed incapacity on the one hand, and fancied humanity and knowledge of truth and science on the other hand—that therefore every difference in the quality of the two wills and in that of the intelligence associated with them—justifies an inequality of treatment which may go as far as subjection. What more can we ask, when Herr Dühring has so deep-rootedly, from the ground up, demolished his own edifice of equality?

But even though we have finished with Herr Dühring's shallow, botched treatment of the idea of equality, this does not mean that we have finished with the idea itself, which especially thanks to Rousseau played a theoretical, and during and since the great revolution[1] a practical political role, and even today still plays an important agitational role in the socialist movement of almost every country. The establishment of its scientific content will also determine its value for proletarian agitation.

The idea that all men, as men, have something in common, and that to that extent they are equal, is of

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[1] Reference by Engels to the French bourgeois revolution of 1789.—*Ed.*

course primeval. But the modern demand for equality is something entirely different from that; this consists rather in deducing from that common quality of being human, from that equality of men as men, a claim to equal political and social status for all human beings, or at least for all citizens of a state or all members of a society. Before that original conception of relative equality could lead to the conclusion that men should have equal rights in the state and in society, before that conclusion could even appear to be something natural and self-evident, thousands of years had to pass and did pass. In the most ancient, primitive communities equality of rights could apply at most to members of the community; women slaves and foreigners were excluded from this equality as a matter of course. Among the Greeks and Romans the inequalities of men were of much greater importance than their equality in any respect. It would necessarily have seemed insanity to the ancients that Greeks and barbarians, freemen and slaves, citizens and peregrines, Roman citizens and Roman subjects (to use a comprehensive term) should have a claim to equal political status. Under the Roman Empire all these distinctions gradually disappeared, except the distinction between freemen and slaves, and in this way there arose, for the freemen at least, that equality as between private individuals on the basis of which Roman law developed—the completest elaboration of law based on private property which we know. But so long as the antithesis between freemen and slaves existed, there could be no talk of drawing legal conclusions from a general equality of *mankind*; we saw this even recently, in the slave-owning states of the North American Union.

Christianity knew only *one* point in which all men were equal: that all were equally born in original sin—which corresponded perfectly to its character as the re-

ligion of the slaves and the oppressed. Apart from this it recognized, at most, the equality of the elect, which however was only stressed at the very beginning. The traces of common ownership which are also found in the early stages of the new religion can be ascribed to solidarity among the proscribed rather than to real equalitarian ideas. Within a very short time the establishment of the distinction between priests and laymen put an end even to this incipient Christian equality.

The overrunning of Western Europe by the Germans abolished for centuries all ideas of equality, through the gradual building up of such a complicated social and political hierarchy as had never existed before. But at the same time the invasion drew Western and Central Europe into the course of historical development, created for the first time a compact cultural area, and within this area also for the first time a system of predominantly national states exerting mutual influence on each other and mutually holding each other in check. Thereby it prepared the ground on which alone the question of the equal status of men, of the rights of man, could at a later period be raised.

The feudal middle ages also developed in its womb the class which was destined, in the course of its further development, to become the standard-bearer of the modern demand for equality: the bourgeoisie. Originally itself a feudal estate, the bourgeoisie developed the predominantly handicraft industry and the exchange of products within feudal society to a relatively high level, when at the end of the fifteenth century the great maritime discoveries opened to it a new career of wider scope. Trade beyond the confines of Europe, which had previously been carried on only between Italy and the Levant, was now extended to America and India, and soon surpassed in importance both the mutual exchange between the various European countries and the internal trade within each

individual country. American gold and silver flooded Europe and forced its way like a disintegrating element into every fissure, rent and pore of feudal society. Handicraft industry could no longer satisfy the rising demand; in the leading industries of the most advanced countries it was replaced by manufacture.

But this mighty revolution in the conditions of the economic life of society was, however, not followed by any immediate corresponding change in its political structure. The political order remained feudal, while society became more and more bourgeois. Trade on a large scale, that is to say, particularly international and, even more so, world trade, requires free owners of commodities who are unrestricted in their movements and as such enjoy equal rights; who may exchange their commodities on the basis of laws that are equal for them all, at least in each particular place. The transition from handicraft to manufacture presupposes the existence of a number of free workers—free on the one hand from the fetters of the guild and on the other from the means whereby they could themselves utilize their labour-power—workers who can contract with the manufacturer for the hire of their labour-power, and hence, as parties to the contract, have rights equal to his. And finally the equality and equal status of all human labour, because and in so far as it is *human* labour, found its unconscious but clearest expression in the law of value of modern bourgeois political economy, according to which the value of a commodity is measured by the socially necessary labour embodied in it.[1]

However, where economic relations required freedom and equality of rights, the political system opposed them at every step with guild restrictions and special privileges.

[1] This derivation of the modern ideas of equality from the economic conditions of bourgeois society was first demonstrated by Marx in *Capital*. [*Note by Engels.*]

Local privileges, differential duties, exceptional laws of all kinds affected in trade not only foreigners and people living in the colonies, but often enough also whole categories of the nationals of the country concerned; everywhere and ever anew the privileges of the guilds barred the development of manufacture. Nowhere was the road clear and the chances equal for the bourgeois competitors—and yet that this be so was the prime and ever more pressing demand.

The demand for liberation from feudal fetters and the establishment of equality of rights by the abolition of feudal inequalities was bound soon to assume wider dimensions, once the economic advance of society had placed it on the order of the day. If it was raised in the interests of industry and trade, it was also necessary to demand the same equality of rights for the great mass of the peasantry who, in every degree of bondage, from total serfdom onwards, were compelled to give the greater part of their labour-time to their gracious feudal lord without compensation and in addition to render innumerable other dues to him and to the state. On the other hand, it was inevitable that a demand should also be made for the abolition of the feudal privileges, of the freedom from taxation of the nobility, of the political privileges of the separate estates. And as people were no longer living in a world empire such as the Roman Empire had been, but in a system of independent states dealing with each other on an equal footing and at approximately the same level of bourgeois development, it was a matter of course that the demand for equality should assume a general character reaching out beyond the individual state, that freedom and equality should be proclaimed *human rights*. And it is significant of the specifically bourgeois character of these human rights that the American constitution, the first to recognize the rights of man, in the same breath confirms the

slavery of the coloured races existing in America: class privileges are proscribed, race privileges sanctioned.

As is well known, however, from the moment when the bourgeoisie emerged from feudal burgherdom, when this estate of the Middle Ages developed into a modern class, it was always and inevitably accompanied by its shadow, the proletariat. And in the same way bourgeois demands for equality were accompanied by proletarian demands for equality. From the moment when the bourgeois demand for the abolition of class *privileges* was put forward, alongside it appeared the proletarian demand for the abolition of the *classes themselves*—at first in religious form, leaning towards primitive Christianity, and later drawing support from the bourgeois equalitarian theories themselves. The proletarians took the bourgeoisie at its word: equality must not be merely apparent, must not apply merely to the sphere of the state, but must also be real, must also be extended to the social, economic sphere. And especially since the French bourgeoisie, from the great revolution on, brought civil equality to the forefront, the French proletariat has answered blow for blow with the demand for social, economic equality, and equality has become the battle-cry particularly of the French proletariat.

The demand for equality in the mouth of the proletariat has therefore a double meaning. It is either—as was the case especially at the very start, for example in the Peasant War—the spontaneous reaction against the crying social inequalities, against the contrast between rich and poor, the feudal lords and their serfs, the surfeiters and the starving; as such it is simply an expression of the revolutionary instinct, and finds its justification in that, and in that only. Or, on the other hand, this demand has arisen as a reaction against the bourgeois demand for equality, drawing more or less cor-

rect and more far-reaching demands from this bourgeois demand, and serving as an agitational means in order to stir up the workers against the capitalists with the aid of the capitalists' own assertions; and in this case it stands or falls with bourgeois equality itself. In both cases the real content of the proletarian demand for equality is the demand for the *abolition of classes*. Any demand for equality which goes beyond that, of necessity passes into absurdity. We have given examples of this, and shall find enough additional ones when we come to Herr Dühring's fantasies of the future.

The idea of equality, both in its bourgeois and in its proletarian form, is therefore itself a historical product, the creation of which required definite historical conditions that in turn themselves presuppose a long previous history. It is therefore anything but an eternal truth. And if today it is taken for granted by the general public—in one sense or another—if, as Marx says, it "already possesses the fixity of a popular prejudice," this is not the effect of its axiomatic truth, but the effect of the general diffusion and the continued appropriateness of the ideas of the eighteenth century. If therefore Herr Dühring is able without more ado to let his famous two men conduct their economic relations on the basis of equality, this is so because it seems quite natural to popular prejudice. And in fact Herr Dühring calls his philosophy *natural* because it is derived solely from things which seem to him quite natural. But why they seem natural to him is a question which of course he does not ask.

XI

MORALITY AND LAW. FREEDOM AND NECESSITY

"In the sphere of politics and law the principles expounded in this course are based on the *most exhaustive specialized studies*. It is therefore ... necessary to proceed from the fact that what we have here ... is a consistent exposition of the *conclusions* reached in the sphere of legal and political science. Jurisprudence was my original special subject and I not only devoted to it the customary three years of theoretical university preparation, but also, during a further three years of court practice, continued to study it particularly with a view to the *deepening* of its scientific content. And *certainly* the critique of private law relationships and the corresponding legal inadequacies could not have been put forward with *such confidence* but for the consciousness that all the weaknesses of the subject *were known* to it as well as its stronger sides."

A man who is justified in saying this of himself must from the outset inspire confidence, especially in contrast with the "one-time, admittedly neglected, legal studies of Herr Marx." And for that reason it must surprise us to find that the critique of private law relationships which steps on to the stage with such confidence is restricted to telling us that "the scientific character of jurisprudence has not developed far," that positive civil law is injustice in that it sanctions property based on force, and that the

"natural basis" of criminal law is *revenge*—an assertion of which in any case the only thing new is its mystical wrapping of "natural basis." The conclusions in political science are limited to the transactions of the famous three men, one of whom has hitherto held down the others by force, with Herr Dühring in all seriousness conducting an investigation into whether it was the second or the third who first introduced violence and subjection.

However, let us go a little more deeply into our confident jurist's most exhaustive specialized studies and his erudition deepened by three years of court practice.

Herr Dühring tells us of Lassalle that he was prosecuted for "*inciting* to an attempt to steal a cash-box" but that "no sentence by the court could be recorded, as the so-called *acquittal for lack of evidence*, which was *then still possible*, supervened—this *half* acquittal."

The Lassalle case referred to here came up in the summer of 1848, before the assizes at Cologne, where, as in almost the whole of the Rhine province, French criminal law was in force. The Prussian *Landrecht* had been introduced by way of exception only for political offences and crimes, but already in April 1848 this exceptional application had been abrogated by Camphausen. French law has no knowledge whatever of the loose Prussian *Landrecht* category of "inciting" to a crime, let alone inciting to an attempt to commit a crime. It knows only *instigation* to crime, and this, to be punishable, must have been committed "by means of gifts, promises, threats, abuse of authority or of power, culpable machinations or artifices" (*Code pénal*, art. 60). The Ministry of State, steeped in the Prussian *Landrecht*, overlooked, just as Herr Dühring did, the essential difference between the sharply defined French code and the vague indefiniteness of the *Landrecht* and, subjecting Lassalle to a tenden-

tiously conducted trial, egregiously failed in the case. Only a person who is completely ignorant of modern French law can venture to assert that French criminal procedure permitted the Prussian *Landrecht* form of an acquittal for lack of evidence, this *half* acquittal; criminal procedure under French law provides only for conviction or acquittal, nothing between.

And so we are forced to say that Herr Dühring would certainly not have been able to perpetrate this "historical depiction in the grand style" against Lassalle if he had ever had the *Code Napoléon* in his hands. We must therefore state as a fact that modern French law, the *only* modern civil code, which rests on the social achievements of the Great French Revolution and translates them into legal form, is *completely unknown* to Herr Dühring.

In another place, in the criticism of trial by jury with majority decision which was adopted throughout the Continent in accordance with the French model, we are taught: "Yes, it will *even* be possible to familiarize oneself with the idea, which for that matter is not without precedent in history, that a conviction *where opinion is divided* should be one of the impossible institutions in a perfect community.... This *important* and *profoundly intelligent* mode of thought, however, as already indicated above, must seem unsuitable for the traditional forms, because it is *too good* for them."

Once again, Herr Dühring is ignorant of the fact that under English common law, i.e., the unwritten law of custom which has been in force since time immemorial, certainly at least since the fourteenth century, unanimity of the jury is absolutely essential, not only for convictions in criminal cases but also for judgments in civil suits. Thus the important and profoundly intelligent mode of thought, which according to Herr Düh-

ring is *too good* for the present-day world, had had legal validity in England as far back as the darkest Middle Ages, and from England it was brought to Ireland, the United States of America and all the English colonies. And yet the most exhaustive specialized study failed to reveal to Herr Dühring even the faintest whisper of all this! The area in which a unanimous verdict by the jury is required is therefore not only infinitely greater than the tiny area where the Prussian *Landrecht* is in force, but is also more extensive than all the areas taken together in which juries decide by majority vote. Not only is French law, the only modern law, totally unknown to Herr Dühring; he is equally ignorant of the only Germanic law which has developed independently of Roman authority up to the present day and spread to all parts of the world—English law. And why does Herr Dühring know nothing of it? Because the English brand of the juridical mode of thought "would anyhow not be able to stand up against the schooling in the pure concepts of the classical Roman jurists given on German soil," says Herr Dühring; and he says further: "what is the English-speaking world with its childish hodge-podge language as compared with our natural language structure?" To which we might answer with Spinoza: *Ignorantia non est argumentum.* Ignorance is no argument.

We can accordingly come to no other final conclusion than that Herr Dühring's most exhaustive specialized study consisted in his absorption for three years in the theoretical study of the *Corpus Juris*,[1] and for a further three years in the practical study of the noble Prussian *Landrecht.* That is certainly quite meritorious, and would be ample for a really respectable district

[1] Comprehensive code of laws of the Roman Empire of the sixth century.—*Ed.*

judge or lawyer in old Prussia. But when a person undertakes to compose a legal philosophy for all worlds and all ages, he should at least have some degree of acquaintance with legal systems like those of the French, English and Americans, nations which have played quite a different role in history from that played by the little corner of Germany in which the Prussian *Landrecht* flourishes. But let us follow him further.

"The variegated medley of local, provincial and national laws, which run counter to one another in the most various directions, in very arbitrary fashion, sometimes as common law, sometimes as written law, often cloaking the most important issues in a purely statutory form—this pattern-book of disorder and contradiction, in which particular points override general principles, and then at times general principles override particular points—is really not calculated to enable anyone to form a clear conception of jurisprudence."

But where does this confusion exist? Once again, within the area where the Prussian *Landrecht* holds sway, where alongside, over or under this *Landrecht* there are provincial laws and local statutes, here and there also common law and other trash, ranging through the most diverse degrees of relative validity and eliciting from all practising jurists that scream for help which Herr Dühring here so sympathetically echoes. He need not even go outside his beloved Prussia—he need only come as far as the Rhine to convince himself that all this has ceased to be an issue there for the last seventy years—not to speak of other civilized countries, where these antiquated conditions have long since been abolished.

Further: "In a less blunt form the natural responsibility of individuals is screened by means of secret and therefore anonymous collective decisions and actions on

the part of *collegia* or other institutions of public authority, which mask the personal share of each separate member." And in another passage: "In our present situation it will be regarded as an *astonishing* and extremely stern demand if one opposes the glossing over and covering up of individual responsibility through the medium of collective bodies."

Perhaps Herr Dühring will regard it as an astonishing piece of information when we tell him that in the sphere of English law each member of a judicial bench has to give his decision separately and in open court, stating the grounds on which it is based; that administrative collective bodies which are not elected and do not transact business or vote publicly are essentially a *Prussian* institution and are unknown in most other countries, and that therefore his demand can be regarded as astonishing and extremely stern only—in *Prussia*.

Similarly, his complaints about the compulsory introduction of religious practices in birth, marriage, death and burial apply to Prussia alone of all the greater civilized countries, and since the adoption of civil registration they no longer apply even there. What Herr Dühring can accomplish only by means of a future "socialitarian" state of things, even Bismarck has meanwhile managed by means of a simple law.

It is just the same with his "plaint over the inadequate preparation of jurists for their profession," a plaint which could be extended to cover the "administrative officials"—it is a specifically Prussian jeremiad; and even his hatred of the Jews, which he carries to ridiculous extremes and exhibits on every possible occasion, is a feature which if not specifically Prussian is yet specific to the region east of the Elbe. That same philosopher of reality who has a sovereign contempt for all prejudices and superstitions is himself so deeply immersed in personal

crotchets that he calls the popular prejudice against the Jews, inherited from the bigotry of the Middle Ages, a "natural judgment" based on "natural grounds," and he rises to the pyramidal heights of the assertion that "socialism is the only power which can oppose population conditions with a rather strong Jewish admixture." (Conditions with a Jewish admixture! What "natural" German!)

Enough of this. The grandiloquent boasts of legal erudition have as their basis—at best—only the most commonplace professional knowledge of quite an ordinary jurist of old Prussia. The sphere of legal and political science, the attainments in which Herr Dühring consistently expounds, "coincides" with the area where the Prussian *Landrecht* holds sway. Apart from the Roman law, with which every jurist is fairly familiar, now even in England, his knowledge of law is confined wholly and entirely to the Prussian *Landrecht*—that legal code of an enlightened patriarchal despotism which is written in a German such as Herr Dühring appears to have been trained in, and which, with its moral glosses, its juristic vagueness and inconsistency, its caning as a means of torture and punishment, belongs entirely to the pre-revolutionary epoch. Whatever exists beyond this Herr Dühring regards as evil—both modern civil French law, and English law with its quite peculiar development and its safeguarding of personal liberty, unknown anywhere on the Continent. The philosophy which "does not allow the validity of any merely *apparent* horizon, but in its powerfully revolutionizing movement unfolds all earths and heavens of outer and inner nature"—has as its *real* horizon: the boundaries of the six eastern provinces of old Prussia, and in addition perhaps the few other patches of land where the noble *Landrecht* holds sway; and beyond this horizon it unfolds neither earths nor heavens,

neither outer nor inner nature, but only a picture of the crassest ignorance of what is happening in the rest of the world.

It is hard to deal with morality and law without coming up against the question of so-called free will, of man's mental responsibility, of the relation between necessity and freedom. And the philosophy of reality also has not only one but even two solutions of this problem.

"All false theories of freedom must be replaced by what we know from experience is the nature of the relation between rational judgment on the one hand and instinctive impulses on the other, a relation which *so to speak* unites them into a resultant force. The fundamental facts of this form of dynamics must be drawn from observation, and for the calculation in advance of events which have not yet occurred must also be estimated *as closely as possible*, in general both as to their nature and magnitude. In this manner the silly delusions of inner freedom, which people have chewed on and fed on for thousands of years, are not only cleared away in thoroughgoing fashion, but are replaced by something positive, which can be made use of for the practical regulation of life."

Viewed thus freedom consists in rational judgment pulling a man to the right while irrational impulses pull him to the left, and in this parallelogram of forces the actual movement proceeds in the direction of the diagonal. Freedom is therefore the mean between judgment and impulse, reason and unreason, and its degree in each individual case can be determined on the basis of experience by a "personal equation," to use an astronomical expression. But a few pages later on we find: "We base moral responsibility on freedom, which however means nothing more to us than susceptibility to conscious motives in accordance with our natural and acquired intel-

ligence. All such motives operate with the inevitability of natural law, notwithstanding an awareness of possible contrary actions; but it is precisely on this unavoidable compulsion that we rely when we apply the moral levers."

This second definition of freedom, which quite unceremoniously gives a knock-out blow to the first one, is again nothing but an extreme vulgarization of the Hegelian conception. Hegel was the first to state correctly the relation between freedom and necessity. To him, freedom is the appreciation of necessity. "Necessity is *blind* only *in so far as it is not understood.*" Freedom does not consist in the dream of independence from natural laws, but in the knowledge of these laws, and in the possibility this gives of systematically making them work towards definite ends. This holds good in relation both to the laws of external nature and to those which govern the bodily and mental existence of men themselves—two classes of laws which we can separate from each other at most only in thought but not in reality. Freedom of the will therefore means nothing but the capacity to make decisions with knowledge of the subject. Therefore the *freer* a man's judgment is in relation to a definite question, the greater is the *necessity* with which the content of this judgment will be determined; while the uncertainty, founded on ignorance, which seems to make an arbitrary choice among many different and conflicting possible decisions, shows precisely by this that it is not free, that it is controlled by the very object it should itself control. Freedom therefore consists in the control over ourselves and over external nature, a control founded on knowledge of natural necessity; it is therefore necessarily a product of historical development. The first men who separated themselves from the animal kingdom were in all essentials as unfree as the animals

themselves, but each step forward in the field of culture was a step towards freedom. On the threshold of human history stands the discovery that mechanical motion can be transformed into heat: the production of fire by friction; at the close of the development so far gone through stands the discovery that heat can be transformed into mechanical motion: the steam-engine.

And, in spite of the gigantic liberating revolution in the social world which the steam-engine is carrying through—and which is not yet half completed—it is beyond all doubt that the generation of fire by friction has had an even greater effect on the liberation of mankind. For the generation of fire by friction gave man for the first time control over one of the forces of nature, and thereby separated him for ever from the animal kingdom. The steam-engine will never bring about such a mighty leap forward in human development, however important it may seem in our eyes as representing all those immense productive forces dependent on it—forces which alone make possible a state of society in which there are no longer class distinctions or anxiety over the means of subsistence for the individual, and in which for the first time there can be talk of real human freedom, of an existence in harmony with the laws of nature that have become known. But how young the whole of human history still is, and how ridiculous it would be to attempt to ascribe any absolute validity to our present views, is evident from the simple fact that all past history can be characterized as the history of the epoch from the practical discovery of the transformation of mechanical motion into heat up to that of the transformation of heat into mechanical motion.

True, Herr Dühring's treatment of history is different. In general, being a record of error, ignorance and barbarity, of violence and subjugation, history is a repulsive

object to the philosophy of reality; but considered in detail it is divided into two great periods, namely (1) from the self-equal state of matter up to the French revolution; (2) from the French revolution up to Herr Dühring; the nineteenth century remains "still in essence reactionary, indeed from the intellectual standpoint even more so (!) than the eighteenth." Nevertheless, it bears socialism in its womb, and therewith "the germ of a mightier regeneration than was fancied (!) by the forerunners and the heroes of the French revolution." The philosophy of reality's contempt for all past history is justified as follows: "The few thousand years, the historical retrospection of which has been facilitated by original documents, are, together with the constitution of man so far, *of little significance* when one thinks of the succession of thousands of years which are still to come.... The human race as a whole is still very young, and when in time to come scientific retrospection has tens of thousands instead of thousands of years to reckon with, the intellectually immature childhood of our institutions becomes a self-evident premise undisputed in relation to our epoch, which will then be revered as hoary antiquity."

Without dwelling on the really "natural language structure" of the last sentence, we shall note only two points. Firstly, that this "hoary antiquity" will in any case remain a historical epoch of the greatest interest for all future generations, because it forms the basis of all subsequent higher development, because it has for its starting-point the moulding of man from the animal kingdom, and for its content the overcoming of obstacles such as will never again confront associated mankind of the future. And secondly, that the close of this hoary antiquity—in contrast to which the future periods of history, which will no longer be kept back by these difficulties

and obstacles, hold the promise of quite other scientific, technical and social achievements—is in any case a very strange moment to choose to lay down the law for these thousands of years that are to come, in the form of final and ultimate truths, immutable truths and deep-rooted conceptions discovered on the basis of the intellectually immature childhood of our so extremely "backward" and "retrogressive" century. Only a Richard Wagner in philosophy—but without Wagner's talents—could fail to see that all the depreciatory epithets slung at previous historical development remain sticking also on what is claimed to be its final outcome—the so-called philosophy of reality.

One of the most significant morsels of the new deep-rooted science is the section on individualization and increasing the value of life. In this section oracular commonplaces bubble up and gush forth in an irresistible torrent for three full chapters. Unfortunately we must limit ourselves to a few short samples.

"The deeper essence of all sensation and therefore of all subjective forms of life rests on the *difference* between states.... But for a *full* (!) life it can be shown without much trouble (!) that its appreciation is heightened and the decisive stimuli are developed, not by persistence in a particular state, but by a transition from one situation in life to another.... The approximately self-equal state which is *so to speak* in permanent inertia and *as it were* continues in the same position of equilibrium, whatever its nature may be, has but little significance for the testing of existence.... Habituation and *so to speak* inurement makes it something of absolute indifference and unconcern, something which is not very distinct from deadness. At most the torment of boredom also enters into it as a kind of negative life impulse.... A life of stagnation extinguishes all passion and all interest in

existence, both for individuals and for peoples. *But it is our law of difference through which all these phenomena become explicable.*"

The rapidity with which Herr Dühring establishes his from the ground up original conclusions passes all belief. The commonplace that the continued stimulation of the same nerve or the continuation of the same stimulus fatigues each nerve or each nervous system, and that therefore in a normal condition nerve stimuli must be interrupted and varied—which for years has been stated in every textbook of physiology and is known to every philistine from his own experience—is first translated into the language of the philosophy of reality. No sooner has this platitude, which is as old as the hills, been translated into the mysterious formula that the deeper essence of all sensation rests on the difference between states, than it is further transformed into "*our* law of difference." And this law of difference makes "absolutely explicable" a whole series of phenomena which in turn are nothing more than illustrations and examples of the pleasantness of variety and which require no explanation whatever even for the most common philistine understanding and gain not the breadth of an atom in clarity by reference to this alleged law of difference.

But this far from exhausts the deep-rootedness of "*our* law of difference." "The sequence of ages in life, and the emergence of different conditions of life bound up with it, furnish a very obvious example with which to illustrate *our* principle of difference.... Child, boy, youth and man experience the intensity of their appreciation of life at each stage not so much when the state in which they find themselves has already become fixed, as in the periods of transition from one to another." Even this is not enough. "*Our* law of difference can be given an even more extended application if we take into considera-

tion the fact that a repetition of what has already been tried or done has no attraction." And now the reader can himself imagine the oracular twaddle for which sentences of the depth and deep-rootedness of those cited form the starting-point. Herr Dühring may well shout triumphantly at the end of his book: "The law of difference has become decisive both in theory and in practice for the appraisement and heightening of the value of life!" This is likewise true of Herr Dühring's appraisement of the intellectual value of his public: he must believe that it is composed of sheer asses or philistines.

We are further given the following extremely practical rules of life: "The method whereby total interest in life can be kept active" (a fitting task for philistines and those who want to become such!) "consists in allowing the particular and *so to speak* elementary interests, of which the total interest is composed, to develop or succeed each other in accordance with natural periods of time. Simultaneously, for the same state the succession of stages may be made use of by replacing the lower and more easily satisfied stimuli by higher and more permanently effective excitations in order to avoid the occurrence of any gaps that are entirely devoid of interest. However it will be necessary to ensure that the natural tensions or those arising in the normal course of social existence are not arbitrarily accumulated or forced or—the opposite perversion—satisfied by the lightest stimulation, and thus prevented from developing a want which is capable of gratification. In this as in other cases the maintenance of the natural rhythm is the precondition of all harmonious and agreeable movement. Nor should anyone set before himself the insoluble problem of trying to prolong the stimuli of any situation beyond the period allotted them by nature or by the circumstances"—and so on. The simpleton who takes as his

rule for the "testing of life" these solemn oracles of philistine pedantry subtilizing over the shallowest platitudes will certainly not have to complain of "gaps entirely devoid of interest." It will take him all his time to prepare his pleasures and get them in the right order, so that he will not have a moment left to enjoy them.

We should try out life, full life. There are only two things which Herr Dühring prohibits us: first "the uncleanliness of indulging in tobacco," and secondly drinks and foods which "have properties that rouse disgust or are in general obnoxious to the more refined feelings." In his course of political economy, however, Herr Dühring writes such a dithyramb on the distilling of spirits that it is impossible that he should include spirituous liquor in this category; we are therefore forced to conclude that his prohibition covers only wine and beer. He has only to prohibit meat, too, and then he will have raised the philosophy of reality to the same height as that on which the late Gustav Struve moved with such great success—the height of pure childishness.

For the rest, Herr Dühring might be slightly more liberal in regard to spirituous liquors. A man who, by his own admission, still cannot find the bridge from the static to the dynamic has surely every reason to be indulgent in judging some poor devil who has for once dipped too deep in his glass and as a result also seeks in vain the bridge from the dynamic to the static.

XII

DIALECTICS. QUANTITY AND QUALITY

"The first and most important principle of the basic logical properties of being refers to the *exclusion of contradiction.* Contradiction is a category which can only appertain to a combination of thoughts, but not to reality. There are no contradictions in things, or, to put it another way, contradiction accepted as reality is itself the apex of absurdity.... The antagonism of forces measured against each other and moving in opposite directions is in fact the basic form of all actions in the life of the world and its creatures. But this opposition of the directions taken by the forces of elements and individuals does not in the slightest degree coincide with the idea of absurd contradictions.... We can be content here with having cleared the fogs which generally rise from the supposed mysteries of logic by presenting a clear picture of the actual absurdity of contradictions in reality, and with having shown the uselessness of the incense which has been burnt here and there in honour of the dialectics of contradiction—the very clumsily carved wooden doll which is substituted for the antagonistic world schematism."

This is practically all we are told about dialectics in the course of philosophy. In his critical history, on the other hand, the dialectics of contradiction, and with it particularly Hegel, is treated quite differently. "Contradiction, according to the Hegelian logic, or rather

Logos doctrine, is objectively present not in thought, which by its nature can only be conceived as subjective and conscious, but in things and processes themselves and can be met with in so to speak corporeal form, so that absurdity does not remain an impossible combination of thought but becomes an actual force. The reality of the absurd is the first article of faith in the Hegelian unity of the logical and the illogical.... The more contradictory a thing the truer it is, or in other words, the more absurd the more credible it is. This maxim, which is not even newly invented but is borrowed from the theology of the Revelation and from mysticism, is the naked expression of the so-called dialectical principle."

The thought-content of the two passages cited can be summed up in the statement that contradiction = absurdity, and therefore cannot occur in the real world. People who in other respects show a fair degree of common sense may regard this statement as having the same self-evident validity as the statement that a straight line cannot be a curve and a curve cannot be straight. But, regardless of all protests made by common sense, the differential calculus under certain circumstances nevertheless equates straight lines and curves, and thus obtains results which common sense, insisting on the absurdity of straight lines being identical with curves, can never attain. And in view of the important role which the so-called dialectics of contradiction has played in philosophy from the time of the ancient Greeks up to the present, even a stronger opponent than Herr Dühring should have felt obliged to attack it with other arguments besides one assertion and a good many abusive epithets.

True, so long as we consider things as at rest and lifeless, each one by itself, alongside and after each

other, we do not run up against any contradictions in them. We find certain qualities which are partly common to, partly different from, and even contradictory to each other, but which in the last-mentioned case are distributed among different objects and therefore contain no contradiction within. Inside the limits of this sphere of observation we can get along on the basis of the usual, metaphysical mode of thought. But the position is quite different as soon as we consider things in their motion, their change, their life, their reciprocal influence on one another. Then we immediately become involved in contradictions. Motion itself is a contradiction: even simple mechanical change of position can only come about through a body being at one and the same moment of time both in one place and in another place, being in one and the same place and also not in it. And the continuous origination and simultaneous solution of this contradiction is precisely what motion is.

Here, therefore, we have a contradiction which "is objectively present in things and processes themselves and can be met with in so to speak corporeal form." And what has Herr Dühring to say about it? He asserts that up to the present there is "no bridge" whatever "in rational mechanics from the strictly static to the dynamic." The reader can now at last see what is hidden behind this favourite phrase of Herr Dühring's—it is nothing but this: the mind which thinks metaphysically is absolutely unable to pass from the idea of rest to the idea of motion, because the contradiction pointed out above blocks its path. To it, motion is simply incomprehensible because it is a contradiction. And in asserting the incompherensibility of motion, it admits against its will the existence of this contradiction, and thus admits the objective presence in things and processes

themselves of a contradiction which is moreover an actual force.

If simple mechanical change of place contains a contradiction, this is even more true of the higher forms of motion of matter, and especially of organic life and its development. We saw above that life consists precisely and primarily in this—that a being is at each moment itself and yet something else. Life is therefore also a contradiction which is present in things and processes themselves, and which constantly originates and resolves itself; and as soon as the contradiction ceases, life, too, comes to an end, and death steps in. We likewise saw that also in the sphere of thought we could not escape contradictions, and that for example the contradiction between man's inherently unlimited capacity for knowledge and its actual presence only in men who are externally limited and possess limited cognition finds its solution in what is—at least practically, for us—an endless succession of generations, in infinite progress.

We have already noted that one of the basic principles of higher mathematics is the contradiction that in certain circumstances straight lines and curves may be the same. It also gets up this other contradiction: that lines which intersect each other before our eyes nevertheless, only five or six centimetres from their point of intersection, can be shown to be parallel, that is, that they will never meet even if extended to infinity. And yet, working with these and with even far greater contradictions, it attains results which are not only correct but also quite unattainable for lower mathematics.

But even lower mathematics teems with contradictions. It is for example a contradiction that a root of A should be a power of A, and yet $A^{\frac{1}{2}} = \sqrt{A}$. It is a contradiction that a negative quantity should be the

square of anything, for every negative quantity multiplied by itself gives a positive square. The square root of minus one is therefore not only a contradiction, but even an absurd contradiction, a real absurdity. And yet $\sqrt{-1}$ is in many cases a necessary result of correct mathematical operations. Furthermore, where would mathematics—lower or higher—be, if it were prohibited from operating with $\sqrt{-1}$?

In its operations with variable quantities mathematics itself enters the field of dialectics, and it is significant that it was a dialectical philosopher, Descartes, who introduced this advance. The relation between the mathematics of variable and the mathematics of constant quantities is in general the same as the relation of dialectical to metaphysical thought. But this does not prevent the great mass of mathematicians from recognizing dialectics only in the sphere of mathematics, and a good many of them from continuing to work in the old, limited, metaphysical way with methods that were obtained dialectically.

It would be possible to go more closely into Herr Dühring's antagonism of forces and his antagonistic world schematism only if he had given us something more on this theme than the mere *phrase*. After accomplishing this feat this antagonism is not even once shown to us at work, either in his world schematism or in his natural philosophy—the most convincing admission that Herr Dühring can do absolutely nothing of a positive character with his "basic form of all actions in the life of the world and its creatures." When someone has in fact lowered Hegel's "Doctrine of Essence" to the platitude of forces moving in opposite directions but not in contradictions, certainly the best thing he can do is to avoid any application of this commonplace.

Marx's *Capital* furnishes Herr Dühring with another occasion for venting his anti-dialectical spleen. "The

absence of natural and intelligible logic which characterizes these dialectical frills and mazes and conceptual arabesques.... Even to the part that has already appeared we must apply the principle that in a certain respect and also in general (!), according to a well-known philosophical preconception, all is to be sought in each and each in all, and that therefore, according to this mixed and misconceived idea, it all amounts to one and the same thing in the end." This insight into the well-known philosophical preconception also enables Herr Dühring to prophesy with assurance what will be the "end" of Marx's economic philosophizing, that is, what the following volumes of *Capital* will contain, and this he does exactly seven lines after he has declared that "speaking in plain human language it is really impossible to divine what is still to come in the two (final) volumes"

This, however, is not the first time that Herr Dühring's writings are revealed to us as belonging to the "things" in which "contradiction is objectively present and can be met with in so to speak corporeal form." But this does not prevent him from going on victoriously as follows: "Yet sound logic will in all probability triumph over its caricature.... This pretence of superiority and this mysterious dialectical rubbish will tempt no one who has even a modicum of sound judgment left to have anything to do ... with these deformities of thought and style. With the demise of the last relics of the dialectical follies this means of duping ... will lose its deceptive influence, and no one will any longer believe that he has to torture himself in order to get behind some profound piece of wisdom where the husked kernel of the abstruse things reveals at best the features of ordinary theories if not of absolute commonplaces.... It is quite impossible to reproduce the (Marxian) maze in accord-

ance with the Logos doctrine without prostituting sound logic." Marx's method, according to Herr Dühring, consists in "performing dialectical miracles for his faithful followers," and so on.

We are not in any way concerned here as yet with the correctness or incorrectness of the economic results of Marx's researches, but only with the dialectical method used by Marx. But this much is certain: most readers of *Capital* will have learnt for the first time from Herr Dühring what it is in fact that they have read. And among them will also be Herr Dühring himself, who in the year 1867 (*Ergänzungsblätter* III, *Heft* 3)[1] was still able to provide what for a thinker of his calibre was a relatively rational review of the book; and he did this without first being obliged, as he now declares is indispensable, to translate the Marxian argument into Dühringian language. And though even then he committed the blunder of identifying Marxian dialectics with the Hegelian, he had not quite lost the capacity to distinguish between the method and the results obtained by using it, and to understand that the latter are not refuted in detail by lampooning the former in general.

At any rate, the most astonishing piece of information given by Herr Dühring is the statement that from the Marxian standpoint "it all amounts to one and the same thing in the end," that therefore to Marx, for example, capitalists and wage-workers, feudal, capitalist and socialist modes of production are also "one and the same thing"—no doubt in the end even Marx and Herr Dühring are "one and the same thing." Such utter nonsense can only be explained if we suppose that the mere mention of the word dialectics throws Herr Dühring into such a state of mental irresponsibility that, as a result

[1] *Supplementary Sheets* III, No. 3.—*Ed.*

of a certain mixed and misconceived idea, what he says and does is "one and the same thing" in the end.

We have here a sample of what Herr Dühring calls "*my* historical depiction in the grand style," or "the summary treatment which settles with genus and type, and does not condescend to honour what a Hume called the learned mob with an exposure in micrological detail; this treatment in a higher and nobler style is the only one compatible with the interests of complete truth and with one's duty to the public which is free from the bonds of the guilds." Historical depiction in the grand style and the summary settlement with genus and type is indeed very convenient for Herr Dühring, inasmuch as this method enables him to neglect all known facts as micrological and equate them to zero, so that instead of proving anything he need only use general phrases, make assertions and thunder his denunciations. The method has the further advantage that it offers no real foothold to an opponent, who is consequently left with almost no other possibility of reply than to make similar summary assertions in the grand style, to resort to general phrases and finally thunder back denunciations at Herr Dühring—in a word, as they say, engage in a slanging match, which is not to everyone's taste. We must therefore be grateful to Herr Dühring for occasionally, by way of exception, dropping the higher and nobler style, and giving us at least two examples of the unsound Marxian Logos doctrine.

"What a comical effect is produced by the reference to the confused, hazy Hegelian notion that quantity changes into quality, and that therefore an advance, when it reaches a certain size, becomes capital by this quantitative increase alone!"

In this "expurgated" presentation by Herr Dühring the effect produced is certainly curious enough. Let us

see how it looks in the original, in Marx. On page 313 (2nd edition of *Capital*),[1] Marx, on the basis of his previous examination of constant and variable capital and surplus-value, draws the conclusion that "not every sum of money, or of value, is at pleasure transformable into capital. To effect this transformation, in fact, a certain minimum of money or of exchange-value must be presupposed in the hands of the individual possessor of money or commodities." He takes as an example the case of a labourer in any branch of industry, who works daily eight hours for himself—that is, in producing the value of his wages—and the following four hours for the capitalist, in producing surplus-value, which immediately flows into the pocket of the capitalist. In this case, one would have to have at his disposal a sum of values sufficient to enable one to provide two labourers with raw materials, instruments of labour, and wages, in order to pocket enough surplus-value every day to live on as well as one of his labourers. And as the aim of capitalist production is not mere subsistence but the increase of wealth, our man with his two labourers would still not be a capitalist. Now in order that he may live twice as well as an ordinary labourer, and turn half of the surplus-value produced again into capital, he would have to be able to employ eight labourers, that is, he would have to possess four times the sum of values assumed above. And it is only after this, and in the course of still further explanations elucidating and substantiating the fact that not every petty sum of values is enough to be transformable into capital, but that in this respect each period of development and each branch of industry has its definite minimum sum, that Marx observes: "Here, as in natural science, *is shown* the cor-

[1] *Capital*, Vol. I, Moscow 1954, pp. 307-08.—*Ed.*

rectness of the law discovered by Hegel (in his *Logic*), that merely quantitative differences beyond a certain point pass into qualitative changes."[1]

And now let the reader admire the higher and nobler style, by virtue of which Herr Dühring attributes to Marx the opposite of what he really said. Marx says: The fact that a sum of values can be transformed into capital only when it has reached a certain size, varying according to the circumstances, but in each case definite, minimum size—this fact is a *proof of the correctness* of the Hegelian law. Herr Dühring makes him say: *Because*, according to the Hegelian law, quantity changes into quality, "*therefore*" "an advance, when it reaches a certain size, becomes capital." That is to say, the very opposite.

In connection with Herr Dühring's examination of the Darwin case, we have already got to know his habit, "in the interests of complete truth" and because of his "duty to the public which is free from the bonds of the guilds," of quoting incorrectly. It becomes more and more evident that this habit is an inner necessity of the philosophy of reality, and it is certainly a very "summary treatment." Not to mention the fact that Herr Dühring further makes Marx speak of any kind of "advance" whatsoever, whereas Marx only refers to an advance made in the form of raw materials, instruments of labour, and wages; and that in doing this Herr Dühring succeeds in making Marx speak pure nonsense. And then he has the cheek to describe as *comic* the nonsense which he himself has fabricated. Just as he built up a Darwin of his own fantasy in order to try out his strength against him, so here he builds up a fantastic Marx. "Historical depiction in the grand style," indeed!

We have already seen earlier, when discussing world

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[1] *Ibid.*, p. 309. Italics by Engels.—*Ed.*

schematism, that in connection with this Hegelian nodal line of measure relations—in which quantitative difference suddenly passes at certain points into qualitative change—Herr Dühring had a little accident: in a weak moment he himself recognized and made use of this line. We gave there one of the best-known examples—that of the change of the aggregate states of water, which under normal atmospheric pressure changes at 0° C. from the liquid into the solid state, and at 100° C. from the liquid into the gaseous state, so that at both these turning-points the merely quantitative change of temperature brings about a qualitative change in the condition of the water.

In proof of this law we might have cited hundreds of other similar facts from nature as well as from human society. Thus, for example, the whole of Part IV of Marx's *Capital*—production of relative surplus-value—co-operation, division of labour and manufacture, machinery and modern industry—deals with innumerable cases in which quantitative change alters the quality, and also qualitative change alters the quantity, of the things under consideration; in which therefore, to use the expression so hated by Herr Dühring, quantity is transformed into quality and vice versa. As for example the fact that the co-operation of a number of people, the fusion of many forces into one single force, creates, to use Marx's phrase, a "new power," which is essentially different from the sum of its separate forces.

Over and above this, in the passage which, in the interests of complete truth, Herr Dühring perverted into its opposite, Marx had added a footnote: "The molecular theory of modern chemistry first scientifically worked out by Laurent and Gerhardt rests on no other law."[1]

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[1] *Ibid.*, footnote 1.—*Ed.*

But what did that matter to Herr Dühring? He knew that: "the eminently modern educative elements provided by the natural-scientific mode of thought are lacking precisely among those who, like Marx and his rival Lassalle, make half-science and a little philosophistics the meagre equipment with which to vamp up their learning"—while with Herr Dühring "the main achievements of exact knowledge in mechanics, physics and chemistry" and so forth serve as the basis—we have seen how. However, in order to enable third persons, too, to reach a decision in the matter, we shall look a little more closely into the example cited in Marx's footnote.

What is referred to here is the homologous series of carbon compounds, of which a great many are already known and each of which has its own algebraic formula of composition. If for example, as is done in chemistry, we denote an atom of carbon by C, an atom of hydrogen by H, an atom of oxygen by O, and the number of atoms of carbon contained in each compound by n, the molecular formulas for some of these series can be expressed as follows:

C_nH_{2n+2} — the series of normal paraffins.
$C_nH_{2n+2}O$ — the series of primary alcohols.
$C_nH_{2n}O_2$ — the series of the monobasic fatty acids.

Let us take as an example the last of these series, and let us assume successively that $n=1$, $n=2$, $n=3$, etc. We then obtain the following results (omitting the isomers):

CH_2O_2	— formic acid	boiling point	100°,	melting point		1°
$C_2H_4O_2$	— acetic acid	„ „	118°	„	„	17°
$C_3H_6O_2$	— propionic acid	„ „	140°	„	„	—
$C_4H_8O_2$	— butyric acid	„ „	162°	„	„	—
$C_5H_{10}O_2$	— valerianic acid	„ „	175°	„	„	—

and so on to $C_{30}H_{60}O_2$, melissic acid, which melts only at 80° and has no boiling point at all, because it cannot evaporate without disintegrating.

Here therefore we have a whole series of qualitatively different bodies, formed by the simple quantitative addition of elements, and in fact always in the same proportion. This is most clearly evident in cases where the quantity of all the elements of the compound changes in the same proportion. Thus, in the normal paraffins C_nH_{2n+2}, the lowest is methane, CH_4, a gas; the highest known, hexadecane, $C_{16}H_{34}$, is a solid body forming colourless crystals which melts at 21° and boils only at 278°. Each new member of both series comes into existence through the addition of CH_2, one atom of carbon and two atoms of hydrogen, to the molecular formula of the preceding member, and this quantitative change in the molecular formula produces at each step a qualitatively different body.

These series, however, are only one particularly obvious example; throughout practically the whole of chemistry, even in the various nitrogen oxides and oxygen acids of phosphorus or sulphur, one can see how "quantity changes into quality," and this allegedly confused, hazy Hegelian notion appears in so to speak corporeal form in things and processes—and no one but Herr Dühring is confused and befogged by it. And if Marx was the first to call attention to it, and if Herr Dühring read the reference without even understanding it (otherwise he would certainly not have allowed this unparalleled outrage to pass unchallenged), this is enough—even without looking back at the famous Dühringian philosophy of nature—to make it clear which of the two, Marx or Herr Dühring, is lacking in "the eminently modern educative elements provided by the

natural-scientific mode of thought" and in acquaintance with the "main achievements of ... chemistry."

In conclusion we shall call one more witness for the transformation of quantity into quality, namely—Napoleon. He describes the combat between the French cavalry, who were bad riders but disciplined, and the Mamelukes, who were undoubtedly the best horsemen of their time for single combat, but lacked discipline, as follows: "Two Mamelukes were undoubtedly more than a match for three Frenchmen; 100 Mamelukes were equal to 100 Frenchmen; 300 Frenchmen could generally beat 300 Mamelukes, and 1,000 Frenchmen invariably defeated 1,500 Mamelukes."

Just as with Marx a definite, though varying, minimum sum of exchange-values was necessary to make possible its transformation into capital, so with Napoleon a detachment of cavalry had to be of a definite minimum number in order to make it possible for the force of discipline, embodied in closed order and planned utilization, to manifest itself and rise superior even to greater numbers of irregular cavalry, in spite of the latter being better mounted, more dexterous horsemen and fighters, and at least as brave as the former. But what does this prove as against Herr Dühring? Was not Napoleon miserably vanquished in his conflict with Europe? Did he not suffer defeat after defeat? And why? Solely in consequence of having introduced the confused, hazy Hegelian notion into cavalry tactics!

XIII

DIALECTICS. NEGATION OF THE NEGATION

"This historical sketch (of the genesis of the so-called primitive accumulation of capital in England) is relatively the best part of Marx's book, and would be even better if it had not relied on the dialectical crutch to help out its scholarly crutch. The Hegelian negation of the negation, in default of anything better and clearer, has in fact to serve here as the midwife to deliver the future from the womb of the past. The abolition of 'individual property,' which since the sixteenth century has been effected in the way indicated above, is the first negation. It will be followed by a second, which bears the character of a negation of the negation and hence of a restoration of 'individual property,' but in a higher form, based on the common ownership of land and of the instruments of labour. Herr Marx calls this new 'individual property' also 'social property,' and in this there appears the Hegelian higher unity, in which the contradiction is supposed to be sublated, that is to say, in the Hegelian verbal jugglery, both overcome and preserved.... According to this, the expropriation of the expropriators is, as it were, the automatic result of historical reality in its materially external relations.... It would be difficult to convince a sensible man of the necessity of the common ownership of land and capital, on the basis of credence in Hegelian word-juggling such

as the negation of the negation.... The nebulous hybrids of Marx's conceptions will not however appear strange to anyone who realizes what nonsense can be concocted with Hegelian dialectics as the scientific basis, or rather what nonsense must necessarily spring from it. For the benefit of the reader who is not familiar with these artifices, it must be pointed out expressly that Hegel's first negation is the catechismal idea of the fall from grace and his second is that of a higher unity leading to redemption. The logic of facts can hardly be based on this nonsensical analogy borrowed from the religious sphere.... Herr Marx remains cheerfully in the nebulous world of his property which is at once both individual and social and leaves it to his adepts to solve for themselves this profound dialectical enigma." Thus far Herr Dühring.

So Marx has no other way of proving the necessity of the social revolution, of establishing the common ownership of land and of the means of production produced by labour, except by citing the Hegelian negation of the negation; and because he bases his socialist theory on these nonsensical analogies borrowed from religion, he arrives at the result that in the society of the future there will be dominant an ownership at once both individual and social, as Hegelian higher unity of the sublated contradiction.

But let the negation of the negation rest for the moment and let us have a look at the "ownership" which is "at once both individual and social." Herr Dühring characterizes this as a "nebulous world," and curiously enough he is really right on this point. Unfortunately, however, it is not Marx but again Herr Dühring himself who is in this nebulous world. Just as his dexterity in handling the Hegelian method of "delirious raving" enabled him without any difficulty to determine what the

still unfinished volumes of *Capital* are sure to contain, so here, too, without any great effort he can put Marx right *à la* Hegel, by imputing to him the higher unity of a property, of which there is not a word in Marx.

Marx says: "It is the negation of negation. This does not re-establish private property for the producer, but gives him individual property based on the acquisitions of the capitalist era; i.e., on co-operation and the possession in common of the land and of the means of production. The transformation of scattered private property, arising from individual labour, into capitalist private property is, naturally, a process, incomparably more protracted, violent, and difficult, than the transformation of capitalistic private property, already practically resting on socialized production, into socialized property."[1] That is all. The state of things brought about by the expropriation of the expropriators is therefore characterized as the re-establishment of individual property, but *on the basis* of the social ownership of the land and of the means of production produced by labour itself. To anyone who understands plain talk this means that social ownership extends to the land and the other means of production, and individual ownership to the products, that is, the articles of consumption. And in order to make the matter comprehensible even to children of six, Marx assumes on page 56 "a community of free individuals, carrying on their work with the means of production in common, in which the labour-power of all the different individuals is consciously applied as the combined labour-power of the community," that is, a society organized on a socialist basis; and he continues: "The total product of our community is a social product. One portion serves as fresh means of production and *remains social.* But

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[1] *Capital,* Vol. I, Moscow 1954, pp. 763-64.—*Ed.*

another portion is consumed by the members as means of subsistence. *A distribution of this portion among them is consequently necessary.*"[1] And surely that is clear enough even for Herr Dühring, in spite of his having Hegel on his brain.

The property which is at once both individual and social, this confusing hybrid, this nonsense which necessarily springs from Hegelian dialectics, this nebulous world, this profound dialectical enigma, which Marx leaves his adepts to solve for themselves—is yet another free creation and imagination on the part of Herr Dühring. Marx, as an alleged Hegelian, is obliged to produce a real higher unity, as the outcome of the negation of the negation, and as Marx does not do this to Herr Dühring's taste, the latter has to fall again into his higher and nobler style, and in the interests of complete truth impute to Marx things which are the products of Herr Dühring's own manufacture. A man who is totally incapable of quoting correctly, even by way of exception, may well become morally indignant at the "Chinese erudition" of other people, who always quote correctly, but precisely by doing this "inadequately conceal their lack of insight into the totality of ideas of the various writers from whom they quote." Herr Dühring is right. Long live historical depiction in the grand style!

Up to this point we have proceeded from the assumption that Herr Dühring's persistent habit of misquoting is done at least in good faith, and arises either from his total incapacity to understand things or from a habit of quoting from memory—a habit which seems to be peculiar to historical depiction in the grand style, but is usually described as slovenly. But we seem to have reached the point at which, even with Herr Dühring, quan-

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[1] *Ibid.*, p. 78. Italics by Engels.—*Ed.*

tity is transformed into quality. For we must take into consideration in the first place that the passage in Marx is in itself perfectly clear and is moreover amplified in the same book by a further passage which leaves no room whatever for misunderstanding; secondly, that Herr Dühring had discovered the monstrosity of "property which is at once both individual and social" neither in the critique of *Capital*, in the *Supplementary Sheets*, which was referred to above, nor even in the critique contained in the first edition of his *Critical History*, but only in the second edition—that is, on the *third* reading of *Capital*; further, that in this second edition, which was rewritten in a socialist sense, it was deemed necessary by Herr Dühring to make Marx say the utmost possible nonsense about the future organization of society, in order to enable him, in contrast, to bring forward all the more triumphantly—as he in fact does—"the economic commune as described by *me* in economic and juridical outline in my *Course*"—when we take all this into consideration, we are almost forced to the conclusion that Herr Dühring has here deliberately made a "beneficent extension" of Marx's idea—beneficent for Herr Dühring.

But what role does the negation of the negation play in Marx? On page 791 and the following pages[1] he sets out the final conclusions which he draws from the preceding fifty pages of economic and historical investigation into the so-called primitive accumulation of capital. Before the capitalist era, petty industry existed, at least in England, on the basis of the private property of the labourer in his means of production. The so-called primitive accumulation of capital consisted there in the expropriation of these immediate producers, that is, in the dissolution of private property based on the labour of its

[1] *Ibid.*, pp. 761-64.—*Ed.*

owner. This became possible because the petty industry referred to above is compatible only with narrow and primitive bounds of production and society and at a certain stage brings forth the material agencies for its own annihilation. This annihilation, the transformation of the individual and scattered means of production into socially concentrated ones, forms the prehistory of capital. As soon as the labourers are turned into proletarians, their means of labour into capital, as soon as the capitalist mode of production stands on its own feet, the further socialization of labour and further transformation of the land and other means of production, and therefore the further expropriation of private proprietors, takes a new form. "That which is now to be expropriated is no longer the labourer working for himself, but the capitalist exploiting many labourers. This expropriation is accomplished by the action of the immanent laws of capitalistic production itself, by the concentration of capital. One capitalist always kills many. Hand in hand with this concentration, or this expropriation of many capitalists by few, develop, on an ever extending scale, the cooperative form of the labour-process, the conscious technical application of science, the methodical cultivation of the soil, the transformation of the instruments of labour into instruments of labour only usable in common, the economizing of all means of production by their use as the means of production of combined, socialized labour. Along with the constantly diminishing number of the magnates of capital, who usurp and monopolize all advantages of this process of transformation, grows the mass of misery, oppression, slavery, degradation, exploitation; but with this too grows the revolt of the working class, a class always increasing in numbers, and disciplined, united, organized by the very mechanism of the process of capitalist production itself.

Capital becomes a fetter upon the mode of production, which has sprung up and flourished along with, and under it. Concentration of the means of production and socialization of labour at last reach a point where they become incompatible with their capitalist integument. This integument is burst asunder. The knell of capitalist private property sounds. The expropriators are expropriated."[1]

And now I ask the reader: where are the dialectical frills and mazes and conceptual arabesques; where the mixed and misconceived ideas according to which everything is all one and the same thing in the end; where the dialectical miracles for his faithful followers; where the mysterious dialectical rubbish and the maze in accordance with the Hegelian Logos doctrine, without which Marx, according to Herr Dühring, is unable to put his exposition into shape? Marx merely shows from history, and here states in a summarized form, that just as formerly petty industry by its very development necessarily created the conditions of its own annihilation, i.e., of the expropriation of the small proprietors, so now the capitalist mode of production has likewise itself created the material conditions from which it must perish. The process is a historical one, and if it is at the same time a dialectical process, this is not Marx's fault, however annoying it may be to Herr Dühring.

It is only at this point, after Marx has completed his proof on the basis of historical and economic facts, that he proceeds: "The capitalist mode of appropriation, the

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[1] *Capital*, Vol. I, Moscow 1954, p. 763. The text of this quotation differs somewhat from the corresponding passage in the English edition of *Capital*. This is due to the fact that Engels cites here the second German edition (1872), while the English edition of *Capital* follows the text of the third German edition (1883), where this passage is slightly changed.—*Ed.*

result of the capitalist mode of production, produces capitalist private property. This is the first negation of individual private property, as founded on the labour of the proprietor. But capitalist production begets, with the inexorability of a law of nature, its own negation. It is the negation of the negation"—and so on (as quoted above).

Thus, by characterizing the process as the negation of the negation, Marx does not intend to prove that the process was historically necessary. On the contrary: only after he has proved from history that in fact the process has partially already occurred, and partially must occur in the future, he in addition characterizes it as a process which develops in accordance with a definite dialectical law. That is all. It is therefore once again a pure distortion of the facts by Herr Dühring when he declares that the negation of the negation has to serve here as the midwife to deliver the future from the womb of the past, or that Marx wants anyone to be convinced of the necessity of the common ownership of land and capital (which is itself a Dühringian contradiction in corporeal form) on the basis of credence in the negation of the negation.

Herr Dühring's total lack of understanding of the nature of dialectics is shown by the very fact that he regards it as a mere proof-producing instrument, as a limited mind might look upon formal logic or elementary mathematics. Even formal logic is primarily a method of arriving at new results, of advancing from the known to the unknown—and dialectics is the same, only much more eminently so; moreover, since it forces its way beyond the narrow horizon of formal logic, it contains the germ of a more comprehensive view of the world. The same correlation exists in mathematics. Elementary mathematics, the mathematics of constant quan-

tities, moves within the confines of formal logic, at any rate on the whole; the mathematics of variables, whose most important part is the infinitesimal calculus, is in essence nothing other than the application of dialectics to mathematical relations. In it, the simple question of proof is definitely pushed into the background, as compared with the manifold application of the method to new spheres of research. But almost all the proofs of higher mathematics, from the first proofs of the differential calculus on, are, from the standpoint of elementary mathematics, strictly speaking, wrong. And this is necessarily so, when, as happens in this case, an attempt is made to prove by formal logic results obtained in the field of dialectics. To attempt to prove anything by means of dialectics alone to a crass metaphysician like Herr Dühring would be as much a waste of time as was the attempt made by Leibnitz and his pupils to prove the principles of the infinitesimal calculus to the mathematicians of their time. The differential gave them the same cramps as Herr Dühring gets from the negation of the negation, in which, moreover, as we shall see, the differential also plays a certain role. Finally these gentlemen—or those of them who had not died in the interval—grudgingly gave way, not because they were convinced, but because it always came out right. Herr Dühring, as he himself tells us, is only in his forties, and if he attains old age, as we hope he may, perhaps his experience will be the same.

But what then is this fearful negation of the negation, which makes life so bitter for Herr Dühring and with him plays the same role of the unpardonable crime as the sin against the Holy Ghost does in Christianity?

A very simple process which is taking place everywhere and every day, which any child can understand as soon as it is stripped of the veil of mystery in which

it was enveloped by the old idealist philosophy and in which it is to the advantage of helpless metaphysicians of Herr Dühring's calibre to keep it enveloped. Let us take a grain of barley. Billions of such grains of barley are milled, boiled and brewed and then consumed. But if such a grain of barley meets with conditions which are normal for it, if it falls on suitable soil, then under the influence of heat and moisture it undergoes a specific change, it germinates; the grain as such ceases to exist, it is negated, and in its place appears the plant which has arisen from it, the negation of the grain. But what is the normal life-process of this plant? It grows, flowers, is fertilized and finally once more produces grains of barley, and as soon as these have ripened the stalk dies, is in its turn negated. As a result of this negation of the negation we have once again the original grain of barley, but not as a single unit, but ten-, twenty- or thirty-fold. Species of grain change extremely slowly, and so the barley of today is almost the same as it was a century ago. But if we take a plastic ornamental plant, for example a dahlia or an orchid, and treat the seed and the plant which grows from it according to the gardener's art, we get as a result of this negation of the negation not only more seeds, but also qualitatively improved seeds, which produce more beautiful flowers, and each repetition of this process, each fresh negation of the negation, enhances this process of perfection.

With most insects, this process follows the same lines as in the case of the grain of barley. Butterflies, for example, spring from the egg by a negation of the egg, pass through certain transformations until they reach sexual maturity, pair and are in turn negated, dying as soon as the pairing process has been completed and the female has laid its numerous eggs. We are not concerned at the moment with the fact that with other

plants and animals the process does not take such a simple form, that before they die they produce seeds, eggs or offspring not once but many times; our purpose here is only to show that the negation of the negation *really does take place* in both kingdoms of the organic world. Furthermore, the whole of geology is a series of negated negations, a series of successive shatterings of old and deposits of new rock formations. First the original earth crust brought into existence by the cooling of the liquid mass was broken up by oceanic, meteorological and atmospherico-chemical action, and these fragmented masses were stratified on the ocean bed. Local upheavals of the ocean bed above the surface of the sea subject portions of these first strata once more to the action of rain, the changing temperature of the seasons and the oxygen and carbonic acid of the atmosphere. These same influences act on the molten masses of rock which issue from the interior of the earth, break through the strata and subsequently cool off. In this way, in the course of millions of centuries, ever new strata are formed and in turn are for the most part destroyed, ever anew serving as material for the formation of new strata. But the result of this process has been a very positive one: the creation of a soil composed of the most varied chemical elements and mechanically fragmented, which makes possible the most abundant and diversified vegetation.

It is the same in mathematics. Let us take any algebraic quantity whatever: for example, a. If this is negated, we get $-a$ (minus a). If we negate that negation, by multiplying $-a$ by $-a$, we get $+a^2$, i.e., the original positive quantity, but at a higher degree, raised to its second power. In this case also it makes no difference that we can obtain the same a^2 by multiplying the positive a by itself, thus likewise getting a^2. For the negated negation is so securely entrenched in a^2 that the latter

always has two square roots, namely a and $-a$. And the fact that it is impossible to get rid of the negated negation, the negative root of the square, acquires very obvious significance as soon as we come to quadratic equations.

The negation of the negation is even more strikingly obvious in higher analysis, in those "summations of indefinitely small magnitudes" which Herr Dühring himself declares are the highest operations of mathematics, and in ordinary language are known as the differential and integral calculus. How are these forms of calculus used? In a given problem, for example, I have two variables, x and y, neither of which can vary without the other also varying in a ratio determined by the facts of the case. I differentiate x and y, i.e., I take x and y as so infinitely small that in comparison with any real quantity, however small, they disappear, that nothing is left of x and y but their reciprocal relation without any, so to speak, material basis, a quantitative ratio in which there is no quantity. Therefore, $\frac{dy}{dx}$, the ratio between the differentials of x and y, is equal to $\frac{0}{0}$, but $\frac{0}{0}$ taken as the expression of $\frac{y}{x}$. I only mention in passing that this ratio between two quantities which have disappeared, caught at the moment of their disappearance, is a contradiction; however, it cannot disturb us any more than it has disturbed the whole of mathematics for almost two hundred years. And now, what have I done but negate x and y, though not in such a way that I need not bother about them any more, not in the way that metaphysics negates, but in the way that corresponds with the facts of the case? In place of x and y, therefore, I have their negation, dx and dy, in the formulas or equations before me. I continue then to operate with

these formulas, treating *dx* and *dy* as quantities which are real, though subject to certain exceptional laws, and at a certain point *I negate the negation*, i.e., I integrate the differential formula, and in place of *dx* and *dy* again get the real quantities *x* and *y*, and am then not where I was at the beginning, but by using this method I have solved the problem on which ordinary geometry and algebra might perhaps have broken their jaws in vain.

It is the same in history, as well. All civilized peoples begin with the common ownership of the land. With all peoples who have passed a certain primitive stage, this common ownership becomes in the course of the development of agriculture a fetter on production. It is abolished, negated, and after a longer or shorter series of intermediate stages is transformed into private property. But at a higher stage of agricultural development, brought about by private property in land itself, private property conversely becomes a fetter on production, as is the case today both with small and large landownership. The demand that it, too, should be negated, that it should once again be transformed into common property, necessarily arises. But this demand does not mean the restoration of the aboriginal common ownership, but the institution of a far higher and more developed form of possession in common which, far from being a hindrance to production, on the contrary for the first time will free production from all fetters and enable it to make full use of modern chemical discoveries and mechanical inventions.

Or let us take another example: the philosophy of antiquity was primitive, natural materialism. As such, it was incapable of clearing up the relation between mind and matter. But the need to get clarity on this question led to the doctrine of a soul separable from the body, then to the assertion of the immortality of this soul,

and finally to monotheism. The old materialism was therefore negated by idealism. But in the course of the further development of philosophy, idealism, too, became untenable and was negated by modern materialism. This modern materialism, the negation of the negation, is not the mere re-establishment of the old, but adds to the permanent foundations of this old materialism the whole thought-content of two thousand years of development of philosophy and natural science, as well as of the history of these two thousand years. It is no longer a philosophy at all, but simply a world outlook which has to establish its validity and be applied not in a science of sciences standing apart, but in the positive sciences. Philosophy is therefore "sublated" here, that is, "both overcome and preserved"; overcome as regards its form, and preserved as regards its real content. Thus, where Herr Dühring sees only "verbal jugglery," closer inspection reveals an actual content.

Finally: even the Rousseau doctrine of equality—of which Dühring's is only a feeble and distorted echo—could not have seen the light but for the midwife's services rendered by the Hegelian negation of the negation—though it was over twenty years before Hegel was born. And far from being ashamed of this, the doctrine in its first presentation bears almost ostentatiously the imprint of its dialectical origin. In the state of nature and savagery men were equal; and as Rousseau regards even language as a perversion of the state of nature, he is fully justified in extending the equality of animals within the limits of a single species also to the animal-men recently classified by Haeckel hypothetically as *Alali*: speechless. But these equal animal-men had one quality which gave them an advantage over the other animals: perfectibility, the capacity to develop further; and this became the cause of inequality. So Rousseau

regards the rise of inequality as progress. But this progress contained an antagonism: it was at the same time retrogression. "All further progress (beyond the original state) meant so many steps seemingly towards the *perfection of the individual man*, but in reality towards the *decay of the race*.... Metallurgy and agriculture were the two arts the discovery of which produced this great revolution" (the transformation of the primeval forest into cultivated land, but along with this the introduction of poverty and slavery through property). "For the poet it is gold and silver, but for the philosopher iron and corn, which have civilized *men* and ruined the human *race*." Each new advance of civilization is at the same time a new advance of inequality. All institutions set up by the society which has arisen with civilization change into the opposite of their original purpose. "It is an incontestable fact, and the fundamental principle of all public law, that the peoples set up their chieftains to safeguard their liberty and not to enslave them." And nevertheless the chiefs necessarily become the oppressors of the peoples, and intensify their oppression up to the point at which inequality, carried to the utmost extreme, again changes into its opposite, becomes the cause of equality: before the despot all are equal—equally ciphers. "Here we have the extreme measure of inequality, *the final point which completes the circle and meets the point from which we set out:* here all private individuals become equal once more, just because they are ciphers, and the subjects have no other law but their master's will." But the despot is only master so long as he is able to use force and therefore "when he is driven out," he cannot "complain of the use of force.... Force alone maintained him in power, and force alone overthrows him; thus everything takes its natural course." And so inequality once more changes into equality; not,

however, into the former natural equality of speechless primitive men, but into the higher equality of the social contract. The oppressors are oppressed. It is the negation of the negation.

Already in Rousseau, therefore, we find not only a line of thought which corresponds exactly to the one developed in Marx's *Capital*, but also, in details, a whole series of the same dialectical turns of speech as Marx used: processes which in their nature are antagonistic, contain a contradiction; transformation of one extreme into its opposite; and finally, as the kernel of the whole thing, the negation of the negation. And though in 1754 Rousseau was not yet able to speak the Hegelian jargon, he was certainly, twenty-three years before Hegel was born, deeply bitten with the Hegelian pestilence, dialectics of contradiction, Logos doctrine, theologics, and so forth. And when Herr Dühring, in his shallow version of Rousseau's theory of equality, begins to operate with his victorious two men, he is himself already on the inclined plane down which he must slide helplessly into the arms of the negation of the negation. The state of things in which the equality of the two men flourished, which was also described as an ideal one, is characterized on page 271 of his *Philosophy* as the "primitive state." This primitive state, however, according to page 279, was necessarily sublated by the "robber system"—the first negation. But now, thanks to the philosophy of reality, we have gone so far as to abolish the robber system and establish in its stead the economic commune based on equality which has been discovered by Herr Dühring—negation of the negation, equality on a higher plane. What a delightful spectacle, and how beneficently it extends our range of vision: Herr Dühring's eminent self committing the capital crime of the negation of the negation!

And so, what is the negation of the negation? An extremely general—and for this reason extremely far-reaching and important—law of development of nature, history, and thought; a law which, as we have seen, holds good in the animal and plant kingdoms, in geology, in mathematics, in history and in philosophy—a law which even Herr Dühring, in spite of all his stubborn resistance, has unwittingly and in his own way to follow. It is obvious that I do not say anything concerning the *particular* process of development of, for example, a grain of barley from germination to the death of the fruit-bearing plant, if I say it is a negation of the negation. For, as the integral calculus is also a negation of the negation, if I said anything of the sort I should only be making the nonsensical statement that the life-process of a barley plant was integral calculus or for that matter that it was socialism. That, however, is precisely what the metaphysicians are constantly imputing to dialectics. When I say that all these processes are a negation of the negation, I bring them all together under this one law of motion, and for this very reason I leave out of account the specific peculiarities of each individual process. Dialectics, however, is nothing more than the science of the general laws of motion and development of nature, human society and thought.

But someone may object: the negation that has taken place in this case is not a real negation: I negate a grain of barley also when I grind it, an insect when I crush it underfoot, or the positive quantity a when I cancel it, and so on. Or I negate the sentence: the rose is a rose, when I say: the rose is not a rose; and what do I get if I then negate this negation and say: but after all the rose is a rose?

These objections are in fact the chief arguments put forward by the metaphysicians against dialectics, and

they are wholly worthy of the narrow-mindedness of this mode of thought. Negation in dialectics does not mean simply saying no, or declaring that something does not exist, or destroying it in any way one likes. Long ago Spinoza said: *Omnis determinatio est negatio*—every limitation or determination is at the same time a negation. And further: the kind of negation is here determined, firstly, by the general and, secondly, by the particular nature of the process. I must not only negate, but also sublate the negation. I must therefore so arrange the first negation that the second remains or becomes possible. How? This depends on the particular nature of each individual case. If I grind a grain of barley, or crush an insect, I have carried out the first part of the action, but have made the second part impossible. Every kind of thing therefore has a peculiar way of being negated in such a manner that it gives rise to a development, and it is just the same with every kind of conception or idea. The infinitesimal calculus involves a form of negation which is different from that used in the formation of positive powers from negative roots. This has to be learnt, like everything else. The bare knowledge that the barley plant and the infinitesimal calculus are both governed by negation of negation does not enable me either to grow barley successfully or to differentiate and integrate; just as little as the bare knowledge of the laws of the determination of sound by the dimensions of the strings enables me to play the violin.

But it is clear that from a negation of the negation which consists in the childish pastime of alternately writing and cancelling *a*, or in alternately declaring that a rose is a rose and that it is not a rose, nothing eventuates but the silliness of the person who adopts such a tedious procedure. And yet the metaphysicians try to make us believe that this is the right way to carry

out a negation of the negation, if we ever should want to do such a thing.

Once again, therefore, it is no one but Herr Dühring who is mystifying us when he asserts that the negation of the negation is a stupid analogy invented by Hegel, borrowed from the sphere of religion and based on the story of the fall of man and his redemption. Men thought dialectically long before they knew what dialectics was, just as they spoke prose long before the term prose existed. The law of negation of the negation, which is unconsciously operative in nature and history and, until it has been recognized, also in our heads, was only first clearly formulated by Hegel. And if Herr Dühring wants to operate with it himself on the quiet and it is only that he cannot stand the name, then let him find a better name. But if his aim is to banish the process itself from thought, we must ask him to be so good as first to banish it from nature and history and to invent a mathematical system in which $-a \times -a$ is not $+a^2$ and in which differentiation and integration are prohibited under severe penalties.

XIV

CONCLUSION

We have now finished with philosophy; such other fantasies of the future as the *Course* contains will be dealt with when we come to Herr Dühring's revolution in socialism. What did Herr Dühring promise us? Everything. And what promises has he kept? None. "The elements of a philosophy which is real and accordingly directed to the reality of nature and of life," the "strictly scientific conception of the world," the "system-creating ideas," and all Herr Dühring's other achievements, trumpeted forth to the world by Herr Dühring in high-sounding phrases, turned out, wherever we laid hold of them, to be *pure charlatanism*. The world schematism which "without the slightest detraction from the profundity of thought, securely established the basic forms of being" proved to be an infinitely vulgarized duplicate of Hegelian logic, and in common with the latter shares the superstition that these "basic forms" or logical categories have led a mysterious existence somewhere before and outside of the world, to which they are "to be applied." The philosophy of nature offered us a cosmogony whose starting-point is a "self-equal state of matter"—a state which can only be conceived by means of the most hopeless confusion as to the relation between matter and motion; a state which can, besides, only be conceived on the assumption of an extramundane personal God who alone can induce motion in this state of mat-

ter. In its treatment of organic nature, the philosophy of reality first rejected the Darwinian struggle for existence and natural selection as "a piece of brutality directed against humanity," and then had to readmit both by the back-door as factors operative in nature, though of second rank. Moreover, the philosophy of reality found occasion to exhibit, in the biological domain, ignorance such as nowadays, when popular science lectures are no longer to be escaped, could hardly be found even among the daughters of the "educated classes." In the domain of morality and law, the philosophy of reality was no more successful in its vulgarization of Rousseau than it had been in its previous shallow version of Hegel; and, so far as jurisprudence is concerned, in spite of all its assurances to the contrary, it likewise displayed a lack of knowledge such as is rarely found even among the most ordinary jurists of old Prussia. The philosophy "which cannot allow the validity of any merely apparent horizon" is content, in juridical matters, with a real horizon which is coextensive with the territory in which the Prussian *Landrecht* exercises jurisdiction. We are still waiting for the "earths and heavens of outer and inner nature" which this philosophy promised to reveal to us in its mighty revolutionizing sweep; just as we are still waiting for the "final and ultimate truths" and the "absolutely fundamental" basis. The philosopher whose mode of thought "excludes" any tendency to a "subjectively limited conception of the world" proves to be subjectively limited not only by what has been shown to be his extremely defective knowledge, his narrowly construed metaphysical mode of thought and his grotesque conceit, but even by his childish personal crotchets. He cannot produce his philosophy of reality without dragging in his repugnance to tobacco, cats and Jews as a general law valid for all the rest of humanity, including the Jews. His "really

critical standpoint" in relation to other people shows itself by his insistently imputing to them things which they never said and which are of Herr Dühring's very own fabrication. His verbose lucubrations on themes worthy of philistines, such as the value of life and the best way to enjoy life, are themselves so steeped in philistinism that they explain his anger at Goethe's Faust. It was really unpardonable of Goethe to make the unmoral Faust and not the serious philosopher of reality, Wagner, his hero.

In short, the philosophy of reality proves to be on the whole what Hegel would call "the weakest residue of the German would-be Enlightenment"—a residue whose tenuity and transparent commonplace character are made more substantial and opaque only by the mixing in of crumbs of oracular rhetoric. And now that we have finished the book we are just as wise as we were at the start; and we are forced to admit that the "new mode of thought," the "from the ground up original conclusions and views" and the "system-creating ideas," though they have certainly shown us a great variety of original nonsense, have not provided us with a single line from which we might have been able to learn something. And this man who praises his talents and his wares to the noisy accompaniment of cymbals and trumpets as loudly as any market quack, and behind whose great words there is nothing, absolutely nothing whatsoever—this man has the temerity to say of people like Fichte, Schelling and Hegel, the least of whom is a giant compared with him, that they are charlatans. Charlatan, indeed! But to whom had it best be applied?

Part II

POLITICAL ECONOMY

I

SUBJECT MATTER AND METHOD

Political economy, in the widest sense, is the science of the laws governing the production and exchange of the material means of subsistence in human society. Production and exchange are two different functions. Production may occur without exchange, but exchange—being necessarily an exchange of products—cannot occur without production. Each of these two social functions is subject to the action of special external influences which to a great extent are peculiar to it and for this reason each has, also to a great extent, its own special laws. But on the other hand, they constantly determine and influence each other to such an extent that they might be termed the abscissa and ordinate of the economic curve.

The conditions under which men produce and exchange vary from country to country, and within each country again from generation to generation. Political economy, therefore, cannot be the same for all countries and for all historical epochs. A tremendous distance separates the bow and arrow, the stone knife and the acts of exchange among savages occurring only by way of exception, from the steam-engine of a thousand horse power, the mechanical loom, the railways and the Bank of England. The inhabitants of Tierra del Fuego have not got so far as mass production and world trade, any more than they have experience of bill-jobbing or a Stock

Exchange crash. Anyone who attempted to bring the political economy of Tierra del Fuego under the same laws as are operative in present-day England would obviously produce nothing but the most banal commonplaces. Political economy is therefore essentially a *historical* science. It deals with material which is historical, that is, constantly changing; it must first investigate the special laws of each individual stage in the evolution of production and exchange, and only when it has completed this investigation will it be able to establish the few quite general laws which hold good for production and exchange in general. At the same time it goes without saying that the laws which are valid for definite modes of production and forms of exchange hold good for all historical periods in which these modes of production and forms of exchange prevail. Thus, for example, the introduction of metallic money brought into operation a series of laws which remain valid for all countries and historical epochs in which metallic money is a medium of exchange.

The mode of production and exchange in a definite historical society, and the historical conditions which have given birth to this society, determine the mode of distribution of its products. In the tribal or village community with common ownership of land—with which, or with the easily recognizable survivals of which, all civilized peoples enter history—a fairly equal distribution of products is a matter of course; where considerable inequality of distribution among the members of the community sets in, this is an indication that the community is already beginning to break up.

Both large- and small-scale agriculture admit of very diverse forms of distribution, depending upon the historical conditions from which they developed. But it is obvious that large-scale farming always gives rise to a

distribution which is quite different from that of small-scale farming; that large-scale agriculture presupposes or creates a class antagonism—slave owners and slaves, feudal lords and serfs, capitalists and wage-workers—while small-scale agriculture does not necessarily involve class differences between the individuals engaged in agricultural production, and that on the contrary the mere existence of such differences indicates the incipient dissolution of small-holding economy.

The introduction and extensive use of metallic money in a country in which hitherto natural economy was universal or predominant is always associated with a more or less rapid revolutionization of the former mode of distribution, and this takes place in such a way that the inequality of distribution among the individuals and therefore the opposition between rich and poor becomes more and more pronounced.

The local guild-controlled handicraft production of the Middle Ages precluded the existence of big capitalists and lifelong wage-workers just as these are inevitably brought into existence by modern large-scale industry, the credit system of the present day, and the form of exchange corresponding to the development of both of them—free competition.

But with the differences in distribution, *class differences* emerge. Society divides into classes: the privileged and the dispossessed, the exploiters and the exploited, the rulers and the ruled; and the state, which the primitive groups of communities of the same tribe had at first arrived at only in order to safeguard their common interests (e.g., irrigation in the East) and for protection against external enemies, from this stage onwards acquires just as much the function of maintaining by force the conditions of existence and domination of the ruling class against the subject class.

Distribution, however, is not a merely passive result of production and exchange; it in its turn reacts upon both of these. Each new mode of production or form of exchange is at first retarded not only by the old forms and the political institutions which correspond to them, but also by the old mode of distribution; it can secure the distribution which is suitable to it only in the course of a long struggle. But the more mobile a given mode of production and exchange, the more capable it is of perfection and development, the more rapidly does distribution reach the stage at which it outgrows its progenitor, the hitherto prevailing mode of production and exchange, and comes into conflict with it. The old primitive communities which have already been mentioned could remain in existence for thousands of years—as in India and among the Slavs up to the present day—before intercourse with the outside world gave rise in their midst to the inequalities of property as a result of which they began to break up. On the contrary, modern capitalist production, which is hardly three hundred years old and has become predominant only since the introduction of modern industry, that is, only in the last hundred years, has in this short time brought about antitheses in distribution—concentration of capital in a few hands on the one side and concentration of the propertyless masses in the big towns on the other—which must of necessity bring about its downfall.

The connection between distribution and the material conditions of existence of society at any period lies so much in the nature of things that it is always reflected in popular instinct. So long as a mode of production still describes an ascending curve of development, it is enthusiastically welcomed even by those who come off worst from its corresponding mode of distribution. This

was the case with the English workers in the beginnings of modern industry. And even while this mode of production remains normal for society, there is, in general, contentment with the distribution, and if objections to it begin to be raised, these come from within the ruling class itself (Saint-Simon, Fourier, Owen) and find no response whatever among the exploited masses. Only when the mode of production in question has already described a good part of its descending curve, when it has half outlived its day, when the conditions of its existence have to a large extent disappeared, and its successor is already knocking at the door—it is only at this stage that the constantly increasing inequality of distribution appears as unjust, it is only then that appeal is made from the facts which have had their day to so-called eternal justice. From a scientific standpoint, this appeal to morality and justice does not help us an inch further; moral indignation, however justifiable, cannot serve economic science as an argument, but only as a symptom. The task of economic science is rather to show that the social abuses which have recently been developing are necessary consequences of the existing mode of production, but at the same time also indications of its approaching dissolution; and to reveal, within the already dissolving economic form of motion, the elements of the future new organization of production and exchange which will put an end to those abuses. The wrath which creates the poet is absolutely in place in describing these abuses, and also in attacking those apostles of harmony in the service of the ruling class who either deny or palliate them; but how little it *proves* in any particular case is evident from the fact that in *every* epoch of past history there has been no lack of material for such wrath.

Political economy, however, as the science of the conditions and forms under which the various human societies have produced and exchanged and on this basis have distributed their products—political economy in this wider sense has still to be brought into being. Such economic science as we possess up to the present is limited almost exclusively to the genesis and development of the capitalist mode of production: it begins with a critique of the survivals of the feudal forms of production and exchange, shows the necessity of their replacement by capitalist forms, then develops the laws of the capitalist mode of production and its corresponding forms of exchange in their positive aspects, that is, the aspects in which they further the general aims of society, and ends with a socialist critique of the capitalist mode of production, that is, with an exposition of its laws in their negative aspects, with a demonstration that this mode of production, by virtue of its own development, drives towards the point at which it makes itself impossible. This critique proves that the capitalist forms of production and exchange become more and more an intolerable fetter on production itself, that the mode of distribution necessarily determined by those forms has produced a situation among the classes which is daily becoming more intolerable—the antagonism, sharpening from day to day, between capitalists, constantly decreasing in number but constantly growing richer, and propertyless wage-workers, whose number is constantly increasing and whose conditions, taken as a whole, are steadily deteriorating; and finally, that the colossal productive forces created within the capitalist mode of production which the latter can no longer master, are only waiting to be taken possession of by a society organized for co-operative work on a planned basis to

ensure to all members of society the means of existence and of the free development of their capacities, and indeed in constantly increasing measure.

In order to carry out this critique of bourgeois economy completely, an acquaintance with the capitalist form of production, exchange and distribution did not suffice. The forms which had preceded it or those which still exist alongside it in less developed countries, had also, at least in their main features, to be examined and compared. Such an investigation and comparison has up to the present been undertaken, in general outline, only by Marx, and we therefore owe almost exclusively to his researches all that has so far been established concerning pre-bourgeois theoretical economy.

Although it first took shape in the minds of a few men of genius towards the end of the seventeenth century, political economy in the narrower sense, in its positive formulation by the physiocrats and Adam Smith, is nevertheless essentially a child of the eighteenth century, and ranks with the achievements of the contemporary great French philosophers of the Enlightenment, sharing with them all the merits and demerits of that period. What we have said of the philosophers is also true of the economists of that time. To them, the new science was not the expression of the conditions and requirements of their epoch, but the expression of eternal reason; the laws of production and exchange discovered by this science were not laws of a historically determined form of those activities, but eternal laws of nature; they were deduced from the nature of man. But this man, when examined more closely, proved to be the average burgher of that epoch, on the way to becoming a bourgeois, and his nature consisted in manufacturing and trading in accordance with the historically determined conditions of that period.

Now that we have acquired sufficient knowledge of our "layer of critical foundations," Herr Dühring, and his method in the philosophical field, it will not be difficult for us to foretell the way in which he will handle political economy. In philosophy, in so far as his writings were not simply drivel (as in his philosophy of nature), his mode of outlook was a distortion of that of the eighteenth century. It was not a question of historical laws of development, but of laws of nature, eternal truths. Social relations such as morality and law were determined, not by the actual historical conditions of the age, but by the famous two men, one of whom either oppresses the other or does not—though the latter alternative, sad to say, has never yet come to pass. We are therefore hardly likely to go astray if we conclude that Herr Dühring will trace political economy also back to final and ultimate truths, eternal laws of nature, and the most empty and barren tautological axioms; that nevertheless he will smuggle in again by the back-door the whole positive content of political economy, so far as this is known to him; and that he will not evolve distribution, as a social phenomenon, out of production and exchange, but will hand it over to his famous two men for final solution. And as all these are tricks with which we are already familiar, our treatment of this question can be all the shorter.

In fact, already on page 2, Herr Dühring tells us that his economics links up with what has been "*established*" in his philosophy, and "in certain essential points depends on *truths* of a higher order *which have already been consummated* [*ausgemacht*] in a higher field of investigation." Everywhere the same importunate eulogy of himself; everywhere Herr Dühring is triumphant over what Herr Dühring has established and put out [*ausge-*

macht]. Put out, yes, we have seen it to surfeit—but put out in the way that people put out a sputtering candle.[1]

Immediately afterwards we find "the most general *laws of nature* governing all economics"—so our forecast was right. But these natural laws permit of a correct understanding of past history only if they are "investigated in that more precise determination which their results have experienced through the political forms of subjection and grouping. Institutions such as slavery and wage bondage, along with which is associated their twin-brother, property based on force, must be regarded as social-economic constitutional forms of a purely political nature, and have hitherto constituted the frame within which the consequences of the economic laws of nature could alone manifest themselves."

This sentence is the fanfare which, like a *leitmotif* in Wagner's operas, announces the approach of the famous two men. But it is more than this: it is the basic theme of Herr Dühring's whole book. In the sphere of law, Herr Dühring could not offer us anything except a bad translation of Rousseau's theory of equality into the language of socialism, such as one has long been able to hear much more effectively rendered in any workers' tavern in Paris. Now he gives us an equally bad socialist translation of the economists' laments over the distortion of the eternal economic laws of nature and of their effects owing to the intervention of the state, of force. And in this Herr Dühring stands, deservedly, absolutely alone among Socialists. Every socialist worker, no matter of what nationality, knows quite well that force only protects exploitation, but does not cause it; that the relation between capital and wage-labour is the basis of his

[1] In German an untranslatable play on words: *ausmachen* means consummate and also put out.—*Ed.*

exploitation, and that this was brought about by purely economic causes and not at all by means of force.

Then we are further told that in all economic questions "two processes, that of production and that of distribution, can be distinguished." Also that J. B. Say, notorious for his superficiality, mentioned in addition a third process, that of consumption, but that he was unable to say anything sensible about it, any more than his successors; and that exchange or circulation is, however, only a department of production, which comprises all the operations required for the products to reach the ultimate consumer, the consumer proper.

By confounding the two essentially different, though also mutually dependent, processes of production and circulation, and unblushingly asserting that the avoidance of this confusion can only "give rise to confusion," Herr Dühring merely shows that he either does not know or does not understand the colossal development which precisely circulation has undergone during the last fifty years, as indeed is further borne out by the rest of his book. But this is not all. After just lumping together production and exchange into one, as simply production, he puts distribution *alongside* production, as a second, wholly external process, which has nothing whatever to do with the first. Now we have seen that distribution, in its decisive features, is always the necessary result of the production and exchange relations of a particular society, as well as of the historical conditions in which this society arose; so much so that when we know these relations and conditions, we can confidently infer the mode of distribution which prevails in this society. But we see also that if Herr Dühring does not want to be unfaithful to the principles "established" by him in his conceptions of morality, law and history, he is compelled to deny this elementary economic fact, especially if he is to smuggle his in-

dispensable two men into economics. And once distribution has been happily disembarrassed of all connection with production and exchange, this great event can come to pass.

Let us first recall how Herr Dühring developed his argument in the field of morality and law. He started originally with one man, and he said: "One man conceived as being alone, or, what is in effect the same, out of all connection with other men, can have no *obligations*; for such a man there can be no question of what he *ought*, but only of what he wants, to do." But what is this man, conceived as being alone and without obligations, but the fateful "primordial Jew Adam" in paradise, where he is without sin simply because there is no possibility for him to commit any?

However, even this philosophy-of-reality Adam is destined to fall into sin. Alongside this Adam there suddenly appears—not, it is true, an Eve with rippling tresses, but a second Adam. And instantly Adam acquires obligations and—breaks them. Instead of treating his brother as having equal rights and clasping him to his breast, he subjects him to his domination, he makes a slave of him—and it is the consequences of this first sin, the original sin of the enslavement of man, from which the world has suffered through the whole course of history down to the present day—which is precisely what makes Herr Dühring think world history is not worth a farthing.

Incidentally, Herr Dühring considered that he had brought the "negation of the negation" sufficiently into contempt by characterizing it as a copy of the old fable of original sin and redemption—but what are we to say of *his* latest version of the same story? (for, in due time, we shall, to use an expression of the reptile press, "get down to brass tacks" on redemption as well). All we can say is that we prefer the old Semitic tribal legend, accord-

ing to which it was worth while for the man and woman to abandon the state of innocence, and that to Herr Dühring will be left the uncontested glory of having constructed his original sin with two men.

Let us now see how he translates this original sin into economic terms: "We can get an appropriate cogitative scheme for the idea of production from the conception of a Robinson Crusoe who is facing nature alone with his own resources and has not to share with anyone else.... Equally appropriate for the representation of what is most essential in the idea of distribution is the cogitative scheme of two persons, who combine their economic forces and must evidently come to a mutual understanding in some form as to their respective shares. In fact nothing more than this simple dualism is required to enable us accurately to portray some of the most important relations of distribution and to study their laws embryonically in their logical necessity.... Co-operative working on an equal footing is here just as conceivable as the combination of forces through the complete subjection of one party, who is then compelled to render economic service as a slave or as a mere tool and is maintained also only as a tool.... Between the state of equality and that of nullity on the one part and of omnipotence and solely-active participation on the other, there is a range of stages which the events of world history have filled in in rich variety. A universal survey of the various institutions of *justice* and *injustice* throughout history is here an essential presupposition," ... and in conclusion the whole question of distribution is transformed into an "economic right of distribution."

Now at last Herr Dühring has firm ground under his feet again. Arm in arm with his two men he can issue his challenge to his age. But behind this trinity stands yet another, an unnamed man.

"Capital has not invented surplus-labour. Wherever a part of society possesses the monopoly of the means of production, the labourer, free or not free, must add to the working-time necessary for his own maintenance an extra working-time in order to produce the means of subsistence for the owners of the means of production, whether this proprietor be the Athenian καλὸς κἀγαθός,[1] Etruscan theocrat, *civis Romanus* (Roman citizen), Norman baron, American slave-owner, Wallachian Boyard, modern landlord or capitalist" (Marx, *Capital*, Vol. I, 2nd edition, p. 227).[2]

When Herr Dühring had thus learned what the basic form of exploitation common to all forms of production up to the present day is—so far as these forms move in class antagonisms—all he had to do was to apply his two men to it, and the deep-rooted foundation of the economics of reality was completed. He did not hesitate for a moment to carry out this "system-creating idea." Labour without compensation, beyond the labour-time necessary for the maintenance of the labourer himself—that is the point. The Adam, who is here called Robinson Crusoe, makes his second Adam—Man Friday—drudge for all he is worth. But why does Friday toil more than is necessary for his own maintenance? To this question, too, Marx step by step provides an answer. But this answer is far too long-winded for the two men. The matter is settled in a trice: Crusoe "oppresses" Friday, compels him "to render economic service as a slave or a tool" and maintains him, but "only as a tool." With these latest "creative turns" of his, Herr Dühring kills as it were two birds with one stone. Firstly, he saves himself the trouble of explaining the various forms of distribution which have

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[1] Aristocrat.—*Ed.*

[2] Marx, *Capital*, Vol. I, Moscow 1954, p. 235.—*Ed.*

hitherto existed, their differences and their causes; taken in the lump, they are simply of no account—they rest on oppression, on force. We shall have to deal with this before long. Secondly, he thereby transfers the whole theory of distribution from the sphere of economics to that of morality and law, that is, from the sphere of established material facts to that of more or less vacillating opinions and sentiments. He therefore no longer has any need to investigate or to prove things; he can go on declaiming to his heart's content and demand that the distribution of the products of labour should be regulated, not in accordance with its real causes, but in accordance with what seems ethical and just to him, Herr Dühring. But what seems just to Herr Dühring is not at all immutable, and hence very far from being a genuine truth. For genuine truths, according to Herr Dühring himself, are "absolutely immutable." In 1868 Herr Dühring asserted—*Die Schicksale meiner sozialen Denkschrift, etc.*[1] —that it was "a tendency of all higher civilization *to put more and more emphasis on property*, and in this, not in confusion of rights and spheres of sovereignty, lies the essence and the future of modern development." And furthermore, he was quite unable to see "*how a transformation of wage-labour into another manner of gaining a livelihood is ever to be reconciled with the laws of human nature and the naturally necessary structure of the body social.*" Thus in 1868, private property and wage-labour are naturally necessary and therefore just; in 1876, both of these are the emanation of force and "robbery" and therefore unjust. And as we cannot possibly tell what in a few years' time may seem ethical and just to such

[1] *Die Schicksale meiner sozialen Denkschrift für das Preussische Staatsministerium* [*The Fate of My Memorial on the Social Problem for the Prussian Ministry of State*].—*Ed.*

a mighty and impetuous genius, we should in any case do better, in considering the distribution of wealth, to stick to the real, objective, economic laws and not to depend on the momentary, changeable, subjective conceptions of Herr Dühring as to what is just or unjust.

If for the impending overthrow of the present mode of distribution of the products of labour, with its crying contrasts of want and luxury, starvation and surfeit, we had no better guarantee than the consciousness that this mode of distribution is unjust, and that justice must eventually triumph, we should be in a pretty bad way, and we might have a long time to wait. The mystics of the Middle Ages who dreamed of the coming millennium were already conscious of the injustice of class antagonisms. On the threshold of modern history, three hundred and fifty years ago, Thomas Münzer proclaimed it to the world. In the English and the French bourgeois revolutions the same call resounded—and died away. And if today the same call for the abolition of class antagonisms and class distinctions, which up to 1830 had left the working and suffering classes cold, if today this call is reechoed a millionfold, if it takes hold of one country after another in the same order and in the same degree of intensity that modern industry develops in each country, if in one generation it has gained a strength that enables it to defy all the forces combined against it and to be confident of victory in the near future—what is the reason for this? The reason is that modern large-scale industry has called into being on the one hand a proletariat, a class which for the first time in history can demand the abolition, not of this or that particular class organization, or of this or that particular class privilege, but of classes themselves, and which is in such a position that it must carry through this demand on pain of sinking to the level of the Chinese coolie. On the other

hand this same large-scale industry has brought into being, in the bourgeoisie, a class which has the monopoly of all the instruments of production and means of subsistence, but which in each speculative boom period and in each crash that follows it proves that it has become incapable of any longer controlling the productive forces, which have grown beyond its power; a class under whose leadership society is racing to ruin like a locomotive whose jammed safety-valve the driver is too weak to open. In other words, the reason is that both the productive forces created by the modern capitalist mode of production and the system of distribution of goods established by it have come into crying contradiction with that mode of production itself, and in fact to such a degree that, if the whole of modern society is not to perish, a revolution in the mode of production and distribution must take place, a revolution which will put an end to all class distinctions. On this tangible, material fact, which is impressing itself in a more or less clear form, but with insuperable necessity, on the minds of the exploited proletarians—on this fact, and not on the conceptions of justice and injustice held by any armchair philosopher, is modern socialism's confidence in victory founded.

II

THE FORCE THEORY

"In my system, the relation between general politics and the forms of economic law is determined in so definite a way and at the same time a way *so original* that it would not be superfluous, in order to facilitate study, to make special reference to this point. The formation of *political* relationships is, *historically, the fundamental thing*, and instances of *economic* dependence are only *effects* or special cases, and are consequently always *facts of a second order.* Some of the newer socialist systems take as their guiding principle the conspicuously mere semblance of a completely reverse relationship, in that they assume that political phenomena are subordinate to and, as it were, grow out of the economic conditions. It is true that these effects of the second order do exist as such, and are most clearly perceptible at the present time; but the *primary* must be sought in *direct political force* and not in any indirect economic power." This conception is also expressed in another passage, in which Herr Dühring "starts from the principle that the political conditions are the decisive cause of the economic situation and that the reverse relationship represents only a reaction of a second order... so long as the political grouping is not taken for its own sake, as the starting-point, but is treated merely as a *stomach-filling agency*, one must be harbouring a hidden portion of

reaction in one's mind, however radical a socialist and revolutionary one may seem to be."

That is Herr Dühring's theory. In this and in many other passages it is simply set up, decreed, so to speak. Nowhere in the three fat tomes is there even the slightest attempt to prove it or to disprove the opposite point of view. And even if the arguments for it were as cheap as blackberries, Herr Dühring would give us none of them. For the whole affair has been already proved through the famous original sin, when Robinson Crusoe made Friday his slave. That was an act of force, hence a political act. And inasmuch as this enslavement was the starting-point and the basic fact underlying all past history and inoculated it with the original sin of injustice, so much so that in the later periods it was only softened down and "transformed into the more indirect forms of economic dependence"; and inasmuch as "property founded on force" which has maintained its legality right up to the present day, is likewise based on this original act of enslavement, it is clear that all economic phenomena must be explained by political causes, that is, by force. And anyone who is not satisfied with that is a reactionary in disguise.

We must first point out that only one with as much self-esteem as Herr Dühring could regard this view as so very "original," which it is not in the least. The idea that political acts, grand performances of state, are decisive in history is as old as written history itself, and is the main reason why so little material has been preserved for us in regard to the really progressive evolution of the peoples which has taken place quietly, in the background, behind these noisy scenes on the stage. This idea dominated all the conceptions of historians in the past, and the first blow against it was delivered only by the French bourgeois historians of the Restoration

period; the only "original" thing about it is that Herr Dühring once again knows nothing of all this.

Furthermore: even if we assume for the moment that Herr Dühring is right in saying that all past history can be traced back to the enslavement of man by man, we are still very far from having got to the bottom of the matter. For the question then arises: how did Crusoe come to enslave Friday? Just for the fun of it? No such thing. On the contrary, we see that Friday "is compelled to render *economic* service as a slave or as a mere tool and is maintained only as a tool." Crusoe enslaved Friday only in order that Friday should work for Crusoe's benefit. And how can he derive any benefit for himself from Friday's labour? Only through Friday producing by his labour more of the necessaries of life than Crusoe has to give him to keep him fit to work. Crusoe, therefore, in violation of Herr Dühring's express orders, "takes the political grouping" arising out of Friday's enslavement "not for its own sake as the starting-point, but merely *as a stomach-filling agency*"; and now let him see to it that he gets along with his lord and master, Dühring.

The childish example specially selected by Herr Dühring in order to prove that force is "historically the fundamental thing," in reality, therefore, proves that force is only the means, and that the aim is economic advantage. And "the more fundamental" the aim is than the means used to secure it, the more fundamental in history is the economic side of the relationship than the political side. The example therefore proves precisely the opposite of what it was supposed to prove. And as in the case of Crusoe and Friday, so in all cases of domination and subjection up to the present day. Subjugation has always been—to use Herr Dühring's elegant expression—a "stomach-filling agency" (taking stomach-filling in a very wide sense), but never and nowhere a political

grouping established "for its own sake." It takes a Herr Dühring to be able to imagine that state taxes are only "effects of a second order," or that the present-day political grouping of the ruling bourgeoisie and the ruled proletariat has come into existence "for its own sake," and not as "a stomach-filling agency" for the ruling bourgeois, that is to say, for the sake of making profits and accumulating capital.

However, let us get back again to our two men. Crusoe, "sword in hand," makes Friday his slave. But in order to pull this off, Crusoe needs something else besides his sword. Not every one can make use of a slave. In order to be able to make use of a slave, one must possess two kinds of things: first, the instruments and material for his slave's labour; and secondly, the means of bare subsistence for him. Therefore, before slavery becomes possible, a certain level of production must already have been reached and a certain inequality of distribution must already have appeared. And for slave-labour to become the dominant mode of production in the whole of a society, an even far higher increase in production, trade and accumulation of wealth was essential. In the ancient primitive communities with common ownership of the land, slavery either did not exist at all or played only a very subordinate role. It was the same in the originally peasant city of Rome; but when Rome became a "world city" and Italic landownership came more and more into the hands of a numerically small class of enormously rich proprietors, the peasant population was supplanted by a population of slaves. If at the time of the Persian wars the number of slaves in Corinth rose to 460,000 and in Aegina to 470,000 and there were ten slaves to every freeman, something else besides "force" was required, namely, a highly developed arts and handicraft industry and an extensive commerce. Slavery in the United States

of America was based far less on force than on the English cotton industry; in those districts where no cotton was grown or which, unlike the border states, did not breed slaves for the cotton-growing states, it died out of itself without any force being used, simply because it did not pay.

Hence, by calling property as it exists today property founded on force, and by characterizing it as "that form of domination *at the root of which lies* not merely the exclusion of fellow-men from the use of the natural means of subsistence, but also, what is far more important, the subjugation of man to make him do servile work," Herr Dühring is making the whole relationship stand on its head. The subjugation of a man to make him do servile work, in all its forms, presupposes that the subjugator has at his disposal the instruments of labour with the help of which alone he is able to employ the person placed in bondage, and in the case of slavery, in addition, the means of subsistence which enable him to keep his slave alive. In all cases, therefore, it presupposes the possession of a certain amount of property, in excess of the average. How did this property come into existence? In any case it is clear that it may in fact have been robbed, and therefore may be based on *force*, but that this is by no means necessary. It may have been got by labour, it may have been stolen, or it may have been obtained by trade or by fraud. In fact, it must have been obtained by labour before there was any possibility of its being robbed.

Private property by no means makes its appearance in history as the result of robbery or force. On the contrary. It already existed, though limited to certain objects, in the ancient primitive communes of all civilized peoples. It developed into the form of commodities within these communes, at first through barter with foreigners.

The more the products of the commune assumed the commodity form, that is, the less they were produced for their producers' own use and the more for the purpose of exchange, and the more the original natural division of labour was extruded by exchange also within the commune, the more did inequality develop in the property owned by the individual members of the commune, the more deeply was the ancient common ownership of the land undermined, and the more rapidly did the commune develop towards its dissolution and transformation into a village of small-holding peasants. For thousands of years Oriental despotism and the changing rule of conquering nomad peoples were unable to injure these old communities; the gradual destruction of their primitive home industry by the competition of products of large-scale industry brought these communities nearer and nearer to dissolution. Force was as little involved in this process as in the dividing up, still taking place now, of the land held in common by the village communities (*Gehöferschaften*) on the Moselle and in the Hochwald; the peasants simply find it to their advantage that the private ownership of land should take the place of common ownership. Even the formation of a primitive aristocracy, as in the case of the Celts, the Germans and the Indian Punjab, took place on the basis of common ownership of the land, and at first was not based in any way on force, but on voluntariness and custom. Wherever private property evolved it was the result of altered relations of production and exchange, in the interest of increased production and in furtherance of intercourse—hence as a result of economic causes. Force plays no part in this at all. Indeed, it is clear that the institution of private property must already be in existence for a robber to be able to *appropriate* another person's property, and that therefore force may be able

to change the possession of, but cannot create, private property as such.

Nor can we use either force or property founded on force in explanation of the "subjugation of man to make him do servile work" in its most modern form—wage-labour. We have already mentioned the role played in the dissolution of the ancient communities, that is, in the direct or indirect general spread of private property, by the transformation of the products of labour into commodities, their production not for consumption by those who produced them, but for exchange. Now in *Capital*, Marx proved with absolute clarity—and Herr Dühring carefully avoids even the slightest reference to this—that at a certain stage of development, the production of commodities becomes transformed into capitalist production, and that at this stage "the laws of appropriation or of private property, laws that are based on the production and circulation of commodities, become by their own inner and inexorable dialectic changed into their very opposite. The exchange of equivalents, the original operation with which we started, has now become turned round in such a way that there is only an apparent exchange. This is owing to the fact, first, that the capital which is exchanged for labour-power is itself but a portion of the product of others' labour appropriated without an equivalent; and, secondly, that this capital must not only be replaced by its producer, but replaced together with an added surplus.... At first the rights of property seemed to us to be based on a man's own labour.... Now, however (at the end of the Marxian analysis), property turns out to be the right, on the part of the capitalist, to appropriate the unpaid labour of others or its product, and to be the impossibility, on the part of the labourer, of appropriating his own product. The separation of property from labour has become the necessary consequence of a law that apparently

originated in their identity."[1] In other words, even if we exclude all possibility of robbery, force and fraud, even if we assume that all private property was originally based on the owner's own labour, and that throughout the whole subsequent process there was only exchange of equal values for equal values, the progressive evolution of production and exchange nevertheless brings us of necessity to the present capitalist mode of production, to the monopolization of the means of production and the means of subsistence in the hands of the one, numerically small, class, to the degradation into propertyless proletarians of the other class, constituting the immense majority, to the periodic alternation of speculative production booms and commercial crises and to the whole of the present anarchy of production. The whole process can be explained by purely economic causes; at no point whatever are robbery, force, the state or political interference of any kind necessary. "Property founded on force" proves here also to be nothing but the phrase of a braggart intended to cover up his lack of understanding of the real course of things.

This course of things, expressed historically, is the history of the evolution of the bourgeoisie. If "political conditions are the decisive cause of the economic situation," then the modern bourgeoisie cannot have developed in struggle with feudalism, but must be the latter's voluntarily begotten pet child. Everyone knows that what took place was the opposite. Originally an oppressed estate liable to pay dues to the ruling feudal nobility, recruited from all manner of serfs and villains, the burghers conquered one position after another in their continuous struggle with the nobility, and finally, in the most highly developed countries, took power in its stead: in France

[1] *Capital*, Vol. I, Moscow 1954, pp. 583-84.—*Ed.*

by directly overthrowing the nobility; in England, by making it more and more bourgeois, and incorporating it as their own ornamental head. And how did they accomplish this? Simply through a change in the "economic situation," which sooner or later, voluntarily or as the outcome of combat, was followed by a change in the political conditions. The struggle of the bourgeoisie against the feudal nobility is the struggle of town against country, industry against landed property, money economy against natural economy; and the decisive weapon of the bourgeoisie in this struggle was its means of *economic* power, constantly increasing through the development of industry, first handicraft, and then, at a later stage, progressing to manufacture, and through the expansion of commerce. During the whole of this struggle political force was on the side of the nobility, except for a period when the Crown played the burghers against the nobility, in order to keep one estate in check by means of the other; but from the moment when the bourgeoisie, still politically powerless, began to grow dangerous owing to its increasing economic power, the Crown resumed its alliance with the nobility, and by so doing called forth the bourgeois revolution, first in England and then in France. The "political conditions" in France had remained unaltered, while the "economic situation" had outgrown them. Judged by his political status the nobleman was everything, the burgher nothing; but judged by his social position the burgher now formed the most important class in the state, while the nobleman had been shorn of all his social functions and was now only drawing payment, in the revenues that came to him, for these functions which had disappeared. Nor was that all. Bourgeois production in its entirety was still hemmed in by the feudal political forms of the Middle Ages, which this production—not only manufacture, but even handicraft industry

—had long outgrown; it had remained hemmed in by all the thousandfold guild privileges and local and provincial customs barriers which had become mere irritants and fetters on production.

The bourgeois revolution put an end to this. Not, however, by adjusting the economic situation to suit the political conditions, in accordance with Herr Dühring's precept—this was precisely what the nobles and the Crown had been vainly trying to do for years—but by doing the opposite, by casting aside the old mouldering political rubbish and creating political conditions in which the new "economic situation" could exist and develop. And in this political and legal atmosphere which was suited to its needs it developed brilliantly, so brilliantly that the bourgeoisie has already come close to occupying the position held by the nobility in 1789: it is becoming more and more not only socially superfluous, but a social hindrance; it is more and more becoming separated from productive activity, and, like the nobility in the past, becoming more and more a class merely drawing revenues; and it has accomplished this revolution in its own position and the creation of a new class, the proletariat, without any hocus-pocus of force whatever, in a purely economic way. Even more: it did not in any way will this result of its own actions and activities—on the contrary, this result established itself with irresistible force, against the will and contrary to the intentions of the bourgeoisie; its own productive forces have grown beyond its control, and, as if necessitated by a law of nature, are driving the whole of bourgeois society towards ruin, or revolution. And if the bourgeois now make their appeal to force in order to save the collapsing "economic situation" from the final crash, this only shows that they are labouring under the same delusion as Herr Dühring: the delusion that "political conditions are the decisive

cause of the economic situation"; this only shows that they imagine, just as Herr Dühring does, that by making use of "the primary," "the direct political force," they can remodel those "facts of the second order," the economic situation and its inevitable development; and that therefore the economic consequences of the steam-engine and the modern machinery driven by it, of world trade and the banking and credit developments of the present day, can be blown out of existence by them with Krupp guns and Mauser rifles.

III

THE FORCE THEORY (Continuation)

But let us look a little more closely at this omnipotent "force" of Herr Dühring's. Crusoe enslaved Friday "sword in hand." Where did he get the sword? Even on the imaginary islands of the Robinson Crusoe epic, swords have not, up to now, been known to grow on trees, and Herr Dühring provides no answer to this question. If Crusoe could procure a sword for himself, we are equally entitled to assume that one fine morning Friday might appear with a loaded revolver in his hand, and then the whole "force" relationship is inverted. Friday commands, and it is Crusoe who has to drudge. We must apologize to the readers for returning with such insistence to the Robinson Crusoe and Friday story, which properly belongs to the nursery and not to the field of science—but how can we help it? We are obliged to apply Herr Dühring's axiomatic method conscientiously, and it is not our fault if in doing so we have to keep all the time within the field of pure childishness. So, then, the revolver triumphs over the sword; and this will probably make even the most childish axiomatician comprehend that force is no mere act of the will, but requires the existence of very real preliminary conditions before it can come into operation, namely, *instruments*, the more perfect of which gets the better of the less perfect; moreover, that these instruments have to be produced, which implies that the producer of more perfect instruments of force, commonly

called arms, gets the better of the producer of the less perfect instruments, and that, in a word, the triumph of force is based on the production of arms, and this in turn on production in general—therefore, on "economic power," on the "economic situation," on the *material* means which force has at its disposal.

Force, nowadays, is the army and navy, and both, as we all know to our cost, are "devilishly expensive." Force, however, cannot make any money; at most it can take away money that has already been made—and this does not help much either—as we have seen, also to our cost, in the case of the French milliards. In the last analysis, therefore, money must be provided through the medium of economic production; and so once more force is conditioned by the economic situation, which furnishes the means for the equipment and maintenance of the instruments of force. But even that is not all. Nothing is more dependent on economic prerequisites than precisely army and navy. Armament, composition, organization, tactics and strategy depend above all on the stage reached at the time in production and on communications. It is not the "free creations of the mind" of generals of genius that have had a revolutionizing effect here, but the invention of better weapons and the change in the human material, the soldiers; at the very most, the part played by generals of genius is limited to adapting methods of fighting to the new weapons and combatants.

At the beginning of the fourteenth century, gunpowder came from the Arabs to Western Europe, and, as every school child knows, completely revolutionized the methods of warfare. The introduction of gunpowder and fire-arms, however, was not at all an act of force, but a step forward in industry, that is, an economic advance. Industry remains industry, whether it is applied to the production or the destruction of things. And the introduction

of fire-arms had a revolutionizing effect not only on the conduct of war itself, but also on the political relationships of domination and subjection. The procurement of powder and fire-arms required industry and money, and both of these were in the hands of the burghers of the towns. From the outset, therefore, fire-arms were the weapons of the towns, and of the rising town-supported monarchy against the feudal nobility. The stone walls of the noblemen's castles, hitherto unapproachable, fell before the cannon of the burghers, and the bullets of the burghers' arquebuses pierced the armour of the knights. With the defeat of the nobility's armour-clad cavalry, the nobility's supremacy was broken; with the development of the bourgeoisie, infantry and artillery became more and more the decisive types of arms; compelled by the development of artillery, the military profession had to add to its organization a new and entirely industrial subsection, the corps of engineers.

The improvement of fire-arms was a very slow process. The pieces of artillery remained clumsy and the musket, in spite of a number of inventions affecting details, was still a crude weapon. It took over three hundred years for a weapon to be constructed that was suitable for the equipment of the whole body of infantry. It was not until the early part of the eighteenth century that the flint-lock musket with a bayonet finally displaced the pike in the equipment of the infantry. The foot soldiers of that period were the mercenaries of princes; they consisted of the most demoralized elements of society, rigorously drilled but quite unreliable and only held together by the rod; they were often hostile prisoners of war who had been pressed into service. The only type of fighting in which these soldiers could apply the new weapons was the tactics of the line, which reached its highest perfection under Frederick II. The whole infantry of an

army was drawn up in triple ranks in the form of a very long, hollow square, and moved in battle order only as a whole; at the very most, either of the two wings might move forward or keep back a little. This cumbrous mass could move in formation only on absolutely level ground, and even then only very slowly (seventy-five paces a minute); a change of formation during a battle was impossible, and once the infantry was engaged, victory or defeat was decided rapidly and at one blow.

In the American War of Independence, these unwieldy lines were met by bands of rebels, who although not drilled were all the better able to shoot from their rifled guns; they were fighting for their vital interests, and therefore did not desert like the mercenaries; nor did they do the English the favour of encountering them also in line and on clear, even ground. They came on in open formation, a series of rapidly-moving troops of sharpshooters, under cover of the woods. Here the line was powerless and succumbed to its invisible and inaccessible opponents. Skirmishing was re-invented—a new method of warfare which was the result of a change in the human war material.

What the American Revolution had begun the French Revolution completed, also in the military sphere. It also could oppose to the well-trained mercenary armies of the Coalition only poorly trained but great masses of soldiers, the levy of the entire nation. But these masses had to protect Paris, that is, to hold a definite area, and for this purpose victory in open mass battle was essential. Mere skirmishes would not achieve enough; a form had to be found to make use of large masses and this form was discovered in the *column*. Column formation made it possible for even poorly trained troops to move with a fair degree of order, and moreover with greater speed (a hundred paces and more in a minute); it made it

possible to break through the rigid forms of the old line formation; to fight on any ground, and therefore even on ground which was extremely disadvantageous to the line formation; to group the troops in any way if in the least appropriate; and, in conjunction with attacks by scattered bands of sharpshooters, to contain the enemy's lines, keep them engaged and wear them out until the moment came for masses held in reserve to break through them at the decisive point in the position. This new method of warfare, based on the combined action of skirmishers and columns and on the partitioning of the army into independent divisions or army corps, composed of all arms of the service—a method brought to full perfection by Napoleon in both its tactical and strategical aspects—had become necessary primarily because of the changed personnel: the soldiery of the French Revolution. Besides, two very important technical prerequisites had been complied with: first, the lighter carriages for field guns constructed by Gribeauval, which alone made possible the more rapid movement now required of them; and secondly, the slanting of the butt, which had hitherto been quite straight, continuing the line of the barrel. Introduced in France in 1777, it was copied from hunting weapons and made it possible to shoot at a particular individual without the probability of missing him. But for this improvement it would have been impossible to skirmish with the old weapons.

The revolutionary system of arming the whole people was soon restricted to compulsory conscription (with substitution for the rich, who paid for their release) and in this form it was adopted by most of the large states on the Continent. Only Prussia attempted, through its *Landwehr*[1] system, to draw to a greater extent on the military

[1] *Landwehr*—militia.—*Ed.*

strength of the nation. Prussia was also the first state to equip its whole infantry—after the rifled muzzle-loader, which had been improved between 1830 and 1860 and found fit for use in war, had played a brief role—with the most up-to-date weapon, the rifled breech-loader. Its successes in 1866 were due to these two innovations.

The Franco-German War was the first in which two armies faced each other both equipped with breech-loading rifles, and moreover both fundamentally in the same tactical formations as in the time of the old smoothbore flint-locks. The only difference was that the Prussians had introduced the company column formation in an attempt to find a form of fighting which was better adapted to the new type of arms. But when, at St. Privat on August 18, the Prussian Guard tried to apply the company column formation seriously, the five regiments which were chiefly engaged lost in less than two hours more than a third of their strength (176 officers and 5,114 men). From that time on the company column, too, was condemned as a battle formation, no less than the battalion column and the line; all idea of further exposing troops in any kind of close formation to enemy gun-fire was abandoned, and on the German side all subsequent fighting was conducted only in those compact bodies of skirmishers into which the columns had so far regularly dissolved of themselves under a deadly hail of bullets, although this had been opposed by the higher commands as contrary to order; and in the same way the only form of movement when under fire from enemy rifles became the *double*. Once again the soldier had been shrewder than the officer; it was *he* who instinctively found the only way of fighting which has proved of service up to now under the fire of breech-loading rifles, and in spite of opposition from his officers he carried it through successfully.

The Franco-German War marked a turning-point of entirely new implications. In the first place the weapons used have reached such a stage of perfection that further progress which would have any revolutionizing influence is no longer possible. Once armies have guns which can hit a battalion at any range at which it can be distinguished, and rifles which are equally effective for hitting individual men, while loading them takes less time than aiming, then all further improvements are of minor importance for field warfare. The era of evolution is therefore, in essentials, closed in this direction. And secondly, this war has compelled all continental powers to introduce in a stricter form the Prussian *Landwehr* system, and with it a military burden which must bring them to ruin within a few years. The army has become the main purpose of the state, and an end in itself; the peoples are there only to provide soldiers and feed them. Militarism dominates and is swallowing Europe. But this militarism also bears within itself the seed of its own destruction. Competition among the individual states forces them, on the one hand, to spend more money each year on the army and navy, artillery, etc., thus more and more hastening their financial collapse; and, on the other hand, to resort to universal compulsory military service more and more extensively, thus in the long run making the whole people familiar with the use of arms, and therefore enabling them at a given moment to make their will prevail against the war-lords in command. And this moment will arrive as soon as the mass of the people—town and country workers and peasants—*will have* a will. At this point the armies of the princes become transformed into armies of the people; the machine refuses to work, and militarism collapses by the dialectics of its own evolution. What the bourgeois democracy of 1848 could not accomplish, just because it was *bourgeois* and

not proletarian, namely, to give the labouring masses a will whose content would be in accord with their class position—socialism will infallibly secure. And this will mean the bursting asunder *from within* of militarism and with it of all standing armies.

That is the first moral of our history of modern infantry. The second moral, which brings us back again to Herr Dühring, is that the whole organization and method of warfare, and along with these victory or defeat, prove to be dependent on material, that is, economic conditions: on the human material and the armaments material, and therefore on the quality and quantity of the population and on technical development. Only a hunting people like the Americans could rediscover skirmishing tactics—and they were hunters as a result of purely economic causes, just as now, as a result of purely economic causes, these same Yankees of the old States have transformed themselves into farmers, industrialists, seamen and merchants who no longer skirmish in the primeval forests, but instead all the more effectively in the field of speculation, where they have likewise made much progress in making use of large masses.

Only a revolution such as the French, which brought about the economic emancipation of the bourgeois and, especially, of the peasantry, could find the mass armies and at the same time the free forms of movement which shattered the old rigid lines—the military counterparts of the absolutism which they were defending. And we have seen in case after case how advances in technique, as soon as they became applicable militarily and in fact were so applied, immediately and almost forcibly produced changes and even revolutions in the methods of warfare, often indeed against the will of the army command. And nowadays any zealous N.C.O. could explain to Herr Dühring how greatly, besides, the conduct of a war

depends on the productivity and means of communication of the army's own hinterland as well as of the theatre of war. In short, always and everywhere it is the economic conditions and the instruments of economic power which help "force" to victory, without which force ceases to be force. And anyone who tried to reform methods of warfare from the opposite standpoint, on the basis of Dühringian principles, would certainly earn nothing but a beating.[1]

If we pass now from land to sea, we find that in the last twenty years alone an even more complete revolution has taken place there. The warship of the Crimean War was the wooden two- and three-decker of 60 to 100 guns; this was still mainly propelled by sail, with only a low-powered auxiliary steam-engine. The guns on these warships were for the most part 32-pounders, weighing approximately 50 centners,[2] with only a few 68-pounders weighing 95 centners. Towards the end of the war, iron-clad floating batteries made their appearance; they were clumsy and almost immobile monsters, but to the guns of that period they were invulnerable. Soon warships, too, were swathed in iron armour-plating; at first the plates were still thin, a thickness of four inches being regarded as extremely heavy armour. But soon the progress made with artillery outstripped the armour-plating; each successive increase in the strength of the armour used was countered by a new and heavier gun which easily pierced the plates. In this way we have already reached

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[1] This is already perfectly well known to the Prussian General Staff. "The *basis* of warfare is primarily the *economic* way of life of the peoples in general," said Herr Max Jähns, a captain of the General Staff, in a scientific lecture (*Kölnische Zeitung*, April 20, 1876, p. 3). [*Note by Engels.*]

[2] German centner of 50 kilograms, i.e., half of the metric centner.—*Ed.*

armour-plating ten, twelve, fourteen and twenty-four inches thick (Italy proposes to have a ship built with plates three feet thick) on the one hand, and on the other, rifled guns of 25, 35, 80 and even 100 tons (at 20 centners) in weight, which can hurl projectiles weighing 300, 400, 1,700 and up to 2,000 pounds to distances which were never dreamed of before. The warship of the present day is a gigantic armoured screw-driven steamer of 8,000 to 9,000 tons displacement and 6,000 to 8,000 horse power, with revolving turrets and four or at most six heavy guns, the bow being extended under water into a ram for running down enemy vessels. It is a single colossal machine, in which steam not only drives the ship at a high speed, but also works the steering-gear, raises the anchor, swings the turrets, changes the elevation of the guns and loads them, pumps out water, hoists and lowers the boats—some of which are themselves also steam-driven—and so forth. And the rivalry between armour-plating and the fire power of guns is so far from being at an end that nowadays a ship is almost always not up to requirements, already out of date, before it is launched. The modern warship is not only a product, but at the same time a specimen of modern large-scale industry, a floating factory—producing mainly, to be sure, a lavish waste of money. The country in which large-scale industry is most highly developed has almost a monopoly of the construction of these ships. All Turkish, almost all Russian and most German armoured vessels have been built in England; armour-plates that are at all serviceable are hardly made outside of Sheffield; of the three steel-works in Europe which alone are able to make the heaviest guns, two (Woolwich and Elswick) are in England, and the third (Krupp) in Germany. In this sphere it is most palpably evident that the "direct political force" which, according to Herr Dühring, is the "decisive cause of the economic

situation," is on the contrary completely subordinate to the economic situation, that not only the construction but also the operation of the marine instrument of force, the warship, has itself become a branch of modern large-scale industry. And that this is so distresses no one more than force itself, that is, the state, which has now to pay for one ship as much as a whole small fleet used to cost; which has to resign itself to seeing these expensive vessels become obsolete, and therefore worthless, even before they slide into the water; and which must certainly be just as disgusted as Herr Dühring that the man of the "economic situation," the engineer, is now of far greater importance on board than the man of "direct force," the captain. We, on the contrary, have absolutely no cause to be vexed when we see that, in this competitive struggle between armour-plating and guns, the warship is being developed to a pitch of perfection which is making it both outrageously costly and unusable in war,[1] and that this struggle makes manifest also in the sphere of naval warfare those inherent dialectical laws of motion on the basis of which militarism, like every other historical phenomenon, is being brought to its doom in consequence of its own development.

Here, too, therefore we see absolutely clearly that it is not by any means true that "the primary must be sought in direct political force and not in any indirect economic power." On the contrary. For what in fact does "the primary" in force itself prove to be? Economic power, the disposal of the means of power of large-scale industry.

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[1] The perfecting of the latest product of modern industry for use in naval warfare, the self-propelled torpedo, seems likely to bring this to pass; it would mean that the smallest torpedo boat would be superior to the most powerful armoured warship. (It should be borne in mind that the above was written in 1878.) [*Note by Engels.*]

Naval political force, which reposes on modern warships, proves to be not at all "direct" but on the contrary *mediated* by economic power, highly developed metallurgy, command of skilled technicians and highly productive coal-mines.

And yet what is the use of it all? If we put Herr Dühring in supreme command in the next naval war, he will destroy all fleets of armoured ships, which are the slaves of the economic situation, without torpedoes or any other artifices, solely by virtue of his "direct force."

IV

THE FORCE THEORY (Conclusion)

"It is a circumstance of great importance that as a matter of fact the domination over *nature*, generally speaking (!), only proceeded (a domination proceeded!) through the domination *over man*. The cultivation of landed property in tracts of considerable size never took place anywhere without the antecedent subjection of man in some form of slave-labour or corvée. The establishment of an economic domination over things has presupposed the political, social and economic domination of man over man. How could a large landed proprietor even be conceived without at once including in this idea also his domination over slaves, serfs, or others indirectly unfree? What could the efforts of an individual, at most supplemented by those of his family, have signified or signify in extensively practised agriculture? The exploitation of the land, or the extension of economic control over it on a scale exceeding the natural capacities of the individual, was only made possible in previous history by the establishment, either before or simultaneously with the introduction of dominion over land, of the enslavement of man which this involves. In the later periods of development this servitude was mitigated,... its present form in the more highly civilized states is wage-labour, to a greater or lesser degree carried on under police rule. Thus wage-labour provides the practical possibility of that form of contemporary wealth which is

represented by dominion over wide areas of land and (!) extensive landed property. It goes without saying that all other types of distributive wealth must be explained historically in a similar way, and the indirect dependence of man on man, which is now the essential feature of the conditions which economically are most fully developed, cannot be understood and explained by their own nature, but only as a somewhat transformed heritage of an earlier direct subjugation and expropriation." Thus Herr Dühring.

Thesis: The domination of nature (by man) presupposes the domination of man (by man).

Proof: The cultivation of landed *property in tracts of considerable size* never took place anywhere except by the use of bondmen.

Proof of the proof: How can there be large landowners without bondmen, as the large landowner, even with his family, could work only a tiny part of his property without the help of bondmen?

Therefore, in order to prove that man first had to subjugate man before he could bring nature under his control, Herr Dühring transforms "nature" without more ado into "landed property in tracts of considerable size," and then this landed property—ownership unspecified—is immediately further transformed into the property of a large landed proprietor, who naturally cannot work his land without bondmen.

In the first place "domination over nature" and the "cultivation of landed property" are by no means the same thing. In industry, domination over nature is exercised on quite another and much greater scale than in agriculture, which is still subject to weather conditions instead of controlling them.

Secondly, if we confine ourselves to the cultivation of landed property consisting of tracts of considerable size, the question arises: whose landed property is it? And

then we find in the early history of all civilized peoples, not the "large landed proprietors" whom Herr Dühring interpolates here with his customary sleight of hand, which he calls "natural dialectics," but tribal and village communities with common ownership of the land. From India to Ireland the cultivation of landed property in tracts of considerable size was originally carried on by such tribal and village communities; sometimes the arable land was tilled jointly for account of the community, and sometimes in separate parcels of land temporarily allotted to families by the community, while woodland and pasture-land continued to be used in common. It is once again characteristic of "the most exhaustive specialized studies" made by Herr Dühring "in the domain of politics and law" that he knows nothing of all this; that all his works breathe total ignorance of Maurer's epoch-making writings on the primitive constitution of the German mark, the basis of all German law, and of the ever-increasing mass of literature, chiefly stimulated by Maurer, which is devoted to proving the primitive common ownership of the land among all civilized peoples of Europe and Asia, and to showing the various forms of its existence and dissolution. Just as in the domain of French and English law Herr Dühring "himself acquired all his ignorance," great as it was, so it is with his even much greater ignorance in the domain of German law. In this domain the man who flies into such a violent rage over the limited horizon of university professors is himself today, at the very most, still where the professors were twenty years ago.

It is a pure "free creation and imagination" on Herr Dühring's part when he asserts that landed proprietors and bondmen were required for the cultivation of landed property in tracts of considerable size. In the whole of the Orient, where the village community or the state owns

the land, the very term landlord is not to be found in the various languages, a point on which Herr Dühring can consult the English jurists, whose efforts in India to solve the question: who is the owner of the land?—were as vain as those of the late Prince Heinrich LXXII of Reuss-Greiz-Schleitz-Lobenstein-Eberswalde in his attempts to solve the question of who was the night-watchman. It was the Turks who first introduced a sort of feudal ownership of land in the countries conquered by them in the Orient. Greece made its entry into history, as far back as the heroic epoch, with a system of social estates which itself was evidently the product of a long but unknown prehistory; even there, however, the land was mainly cultivated by independent peasants; the larger estates of the nobles and tribal chiefs were the exception; moreover they disappeared soon after. Italy was brought under cultivation chiefly by peasants; when, in the final period of the Roman Republic, the great complexes of estates, the latifundia, displaced the small peasants and replaced them with slaves, they also replaced tillage with stock-raising, and, as Pliny already realized, brought Italy to ruin (*latifundia Italiam perdidere*). During the Middle Ages, peasant farming was predominant throughout Europe (especially in bringing virgin soil into cultivation); and in relation to the question we are now considering it is of no importance whether these peasants had to pay dues, and if so what dues, to any feudal lords. The colonists from Friesland, Lower Saxony, Flanders and the Lower Rhine, who brought under cultivation the land east of the Elbe which had been wrested from the Slavs, did this as free peasants under very favourable quit-rent tenures, and not at all under "some form of corvée."

In North America, by far the largest portion of the land was opened for cultivation by the labour of free

farmers, while the big landlords of the South, with their slaves and their rapacious tilling of the land, exhausted the soil until it could grow only firs, so that the cultivation of cotton was forced further and further west. In Australia and New Zealand, all attempts of the British government to establish artificially a landed aristocracy came to nothing. In short, if we except the tropical and subtropical colonies, where the climate makes agricultural labour impossible for Europeans, the big landlord who subjugates nature by means of his slaves or serfs and brings the land under cultivation proves to be a pure figment of the imagination. The very reverse is the case. Where he makes his appearance in antiquity, as in Italy, he does not bring wasteland into cultivation, but transforms arable land brought under cultivation by peasants into stock pastures, depopulating and ruining whole countries. Only in a more recent period, when the increasing density of population had raised the value of land, and particularly since the development of agricultural science had made even poorer land more cultivable—it is only from this period that large landowners began to participate on an extensive scale in bringing wasteland and grass-land under cultivation—and this mainly through the robbery of common land from the peasants, both in England and in Germany. But there was another side even to this. For every acre of common land which the large landowners brought into cultivation in England, they transformed at least three acres of arable land in Scotland into sheepruns and eventually even into mere big-game hunting-grounds.

We are concerned here only with Herr Dühring's assertion that the bringing into cultivation of tracts of land of considerable size and therefore of practically the whole area now cultivated, "never and nowhere" took place except through the agency of big landlords and

their bondmen—an assertion which, as we have seen, "presupposes" a really unprecedented ignorance of history. It is not necessary, therefore, for us to examine here either to what extent, at different periods, areas which were already made entirely or mainly cultivable were cultivated by slaves (as in the hey-day of Greece) or serfs (as in the manors of the Middle Ages); or what was the social function of the large landowners at various periods.

And after Herr Dühring has shown us this masterpiece of the imagination—in which we do not know whether the conjuring trick of deduction or the falsification of history is more to be admired—he exclaims triumphantly: "It goes without saying that all other types of distributive wealth *must be explained historically in similar manner*!" Which of course saves him the trouble of wasting even a single word more on the origin, for example, of capital.

If, with his domination of man by man as a prior condition for the domination of nature by man, Herr Dühring only wanted to state in a general way that the whole of our present economic order, the level of development now attained by agriculture and industry, is the result of a social history which evolved in class antagonisms, in relationships of domination and subjection, he is saying something which long ago, ever since the *Communist Manifesto*, became a commonplace. But the question at issue is how we are to explain the origin of classes and relations based on domination, and if Herr Dühring's only answer is the one word "force," we are left exactly where we were at the start. The mere fact that the ruled and exploited have at all times been far more numerous than the rulers and the exploiters, and that therefore it is in the hands of the former that the real force has reposed, is enough to demonstrate the absurdity of the whole force

theory. The relationships based on domination and subjection have therefore still to be explained.

They arose in two ways.

As men originally made their exit from the animal world—in the narrower sense of the term—so they made their entry into history: still half animal, brutal, still helpless in face of the forces of nature, still ignorant of their own strength; and consequently as poor as the animals and hardly more productive than they. There prevailed a certain equality in the conditions of existence, and for the heads of families also a kind of equality of social position—at least an absence of social classes—which continued among the primitive agricultural communities of the civilized peoples of a later period. In each such community there were from the beginning certain common interests the safeguarding of which had to be handed over to individuals, true, under the control of the community as a whole: adjudication of disputes; repression of abuse of authority by individuals; control of water supplies, especially in hot countries; and finally, when conditions were still absolutely primitive, religious functions. Such offices are found in aboriginal communities of every period—in the oldest German marks and even today in India. They are naturally endowed with a certain measure of authority and are the beginnings of state power. The productive forces gradually increase; the increasing density of the population creates at one point common interests, at another conflicting interests, between the separate communities, whose grouping into larger units brings about in turn a new division of labour, the setting up of organs to safeguard common interests and combat conflicting interests. These organs which, if only because they represent the common interests of the whole group, hold a special position in relation to each individual community—in certain circumstances even one

of opposition—soon make themselves still more independent, partly through heredity of functions, which comes about almost as a matter of course in a world where everything occurs spontaneously, and partly because they become increasingly indispensable owing to the growing number of conflicts with other groups. It is not necessary for us to examine here how this independence of social functions in relation to society increased with time until it developed into domination over society; how he who was originally the servant, where conditions were favourable, changed gradually into the lord; how this lord, depending on the conditions, emerged as an Oriental despot or satrap, the dynast of a Greek tribe, chieftain of a Celtic clan, and so on; to what extent he subsequently had recourse to force in the course of this transformation; and how finally the individual rulers united into a ruling class. Here we are only concerned with establishing the fact that the exercise of a social function was everywhere the basis of political supremacy; and further that political supremacy has existed for any length of time only when it discharged its social functions. However great the number of despotisms which rose and fell in Persia and India, each was fully aware that above all it was the entrepreneur responsible for the collective maintenance of irrigation throughout the river valleys, without which no agriculture was possible there. It was reserved for the enlightened English to lose sight of this in India; they let the irrigation canals and sluices fall into decay, and are now at last discovering, through the regularly recurring famines, that they have neglected the one activity which might have made their rule in India at least as legitimate as that of their predecessors.

But alongside this process of formation of classes another was also taking place. The natural division of

labour within the family cultivating the soil made possible, at a certain level of well-being, the introduction of one or more strangers as additional labour forces. This was especially the case in countries where the old common ownership of the land had already disintegrated or at least the former joint cultivation had given place to the separate cultivation of parcels of land by the respective families. Production had developed so far that the labour-power of a man could now produce more than was necessary for its mere maintenance; the means of maintaining additional labour forces existed; likewise the means of employing them; labour-power acquired a *value*. But the community itself and the association to which it belonged yielded no available, superfluous labour forces. On the other hand, such forces were provided by war, and war was as old as the simultaneous existence alongside each other of several groups of communities. Up to that time one had not known what to do with prisoners of war, and had therefore simply killed them; at an even earlier period, eaten them. But at the stage of the "economic situation" which had now been attained the prisoners acquired a value; one therefore let them live and made use of their labour. Thus force, instead of controlling the economic situation, was on the contrary pressed into the service of the economic situation. *Slavery* had been invented. It soon became the dominant form of production among all peoples who were developing beyond the old community, but in the end was also one of the chief causes of their decay. It was slavery that first made possible the division of labour between agriculture and industry on a larger scale, and thereby also Hellenism, the flowering of the ancient world. Without slavery, no Greek state, no Greek art and science; without slavery, no Roman Empire. But without the basis laid by Grecian culture, and the Roman Empire, also no

modern Europe. We should never forget that our whole economic, political and intellectual development presupposes a state of things in which slavery was as necessary as it was universally recognized. In this sense we are entitled to say: Without the slavery of antiquity no modern socialism.

It is very easy to inveigh against slavery and similar things in general terms, and to give vent to high moral indignation at such infamies. Unfortunately all that this conveys is only what everyone knows, namely, that these institutions of antiquity are no longer in accord with our present conditions and our sentiments, which these conditions determine. But it does not tell us one word as to how these institutions arose, why they existed, and what role they played in history. And when we examine these questions, we are compelled to say—however contradictory and heretical it may sound—that the introduction of slavery under the conditions prevailing at that time was a great step forward. For it is a fact that man sprang from the beasts, and had consequently to use barbaric and almost bestial means to extricate himself from barbarism. Where the ancient communes have continued to exist, they have for thousands of years formed the basis of the cruelest form of state, Oriental despotism, from India to Russia. It was only where these communities dissolved that the peoples made progress of themselves, and their next economic advance consisted in the increase and development of production by means of slave labour. It is clear that so long as human labour was still so little productive that it provided but a small surplus over and above the necessary means of subsistence, any increase of the productive forces, extension of trade, development of the state and of law, or foundation of art and science, was possible only by means of a greater division of labour. And the necessary basis for this was the great

division of labour between the masses discharging simple manual labour and the few privileged persons directing labour, conducting trade and public affairs, and, at a later stage, occupying themselves with art and science. The simplest and most natural form of this division of labour was in fact slavery. In the historical conditions of the ancient world, and particularly of Greece, the advance to a society based on class antagonisms could be accomplished only in the form of slavery. This was an advance even for the slaves; the prisoners of war, from whom the mass of the slaves was recruited, now at least saved their lives, instead of being killed as they had been before, or even roasted, as at a still earlier period.

We may add at this point that all historical antagonisms between exploiting and exploited, ruling and oppressed classes to this very day find their explanation in this same relatively undeveloped productivity of human labour. So long as the really working population were so much occupied with their necessary labour that they had no time left for looking after the common affairs of society—the direction of labour, affairs of state, legal matters, art, science, etc.—so long was it necessary that there should constantly exist a special class, freed from actual labour, to manage these affairs; and this class never failed, for its own advantage, to impose a greater and greater burden of labour on the working masses. Only the immense increase of the productive forces attained by modern industry has made it possible to distribute labour among all members of society without exception, and thereby to limit the labour-time of each individual member to such an extent that all have enough free time left to take part in the general—both theoretical and practical—affairs of society. It is only now, therefore, that every ruling and exploiting class has become superfluous and indeed a hindrance to social development, and it is only now,

too, that it will be inexorably abolished, however much it may be in possession of "direct force."

When, therefore, Herr Dühring turns up his nose at Hellenism because it was founded on slavery, he might with equal justice reproach the Greeks with having had no steam-engines or electric telegraphs. And when he asserts that our modern wage bondage can only be explained as a somewhat transformed and mitigated heritage of slavery, and not by its own nature (that is, by the economic laws of modern society), this either means only that both wage-labour and slavery are forms of bondage and class domination, which every child knows to be so, or is false. For with equal justice we might say that wage-labour could only be explained as a mitigated form of cannibalism, which, it is now established, was the universal primitive form of utilization of defeated enemies.

The role played in history by force as contrasted with economic development is therefore clear. In the first place, all political power is originally based on an economic, social function, and increases in proportion as the members of society, through the dissolution of the primitive community, become transformed into private producers, and thus become more and more divorced from the administrators of the common functions of society. Secondly, after the political force has made itself independent in relation to society, and has transformed itself from its servant into its master, it can work in two different directions. Either it works in the sense and in the direction of the natural economic development, in which case no conflict arises between them, the economic development being accelerated. Or it works against economic development, in which case, as a rule, with but few exceptions, force succumbs to it. These few exceptions are isolated cases of conquest, in which the more barbarian conquerors

exterminated or drove out the population of a country and laid waste or allowed to go to ruin productive forces which they did not know how to use. This was what the Christians in Moorish Spain did with the major part of the irrigation works on which the highly-developed agriculture and horticulture of the Moors depended. Every conquest by a more barbarian people disturbs of course the economic development and destroys numerous productive forces. But in the immense majority of cases where the conquest is permanent, the more barbarian conqueror has to adapt himself to the higher "economic situation" as it emerges from the conquest; he is assimilated by the vanquished and in most cases he has even to adopt their language. But where—apart from cases of conquest—the internal state power of a country becomes antagonistic to its economic development, as at a certain stage occurred with almost every political power in the past, the contest always ended with the downfall of the political power. Inexorably and without exception the economic development has forced its way through—we have already mentioned the latest and most striking example of this: the great French Revolution. If, in accordance with Herr Dühring's theory, the economic situation and with it the economic structure of a given country were dependent simply on political force, it is absolutely impossible to understand why Frederick William IV after 1848 could not succeed, in spite of his "magnificent army," in grafting the mediaeval guilds and other romantic oddities on to the railways, the steam-engines and the large-scale industry which was just then developing in his country; or why the tsar of Russia, who is possessed of even much more forcible means, is not only unable to pay his debts, but cannot even maintain his "force" without continually borrowing from the "economic situation" of Western Europe.

To Herr Dühring force is the absolute evil; the first act of force is to him the original sin; his whole exposition is a jeremiad on the contamination of all subsequent history consummated by this original sin; a jeremiad on the shameful perversion of all natural and social laws by this diabolical power, force. That force, however, plays also another role in history, a revolutionary role; that, in the words of Marx, it is the midwife of every old society pregnant with a new one, that it is the instrument with the aid of which social movement forces its way through and shatters the dead, fossilized political forms—of this there is not a word in Herr Dühring. It is only with sighs and groans that he admits the possibility that force will perhaps be necessary for the overthrow of the economic system of exploitation—unfortunately, because all use of force, forsooth, demoralizes the person who uses it. And this in spite of the immense moral and spiritual impetus which has been given by every victorious revolution! And this in Germany, where a violent collision—which indeed may be forced on the people—would at least have the advantage of wiping out the servility which has permeated the national consciousness as a result of the humiliation of the Thirty Years' War. And this parsons' mode of thought—lifeless, insipid and impotent—claims the right to impose itself on the most revolutionary party that history has known!

V

THEORY OF VALUE

It is now about a hundred years since the publication in Leipzig of a book which by the beginning of the nineteenth century had run through over thirty editions; it was circulated and distributed in town and country by the authorities, by preachers and philanthropists of all kinds, and was generally prescribed as a reader for use in the elementary schools. This book was Rochow's *Children's Friend.* Its purpose was to teach the youthful offspring of the peasants and artisans their vocation in life and their duties to their superiors in society and in the state, and likewise to inspire in them a beneficent contentment with their lot on earth, with black bread and potatoes, serf labour, low wages, paternal thrashings and other delectations of this sort, and all that by means of the system of enlightenment which was then in vogue. With this aim in view the youth of the towns and of the countryside was admonished how wisely nature had ordained that man must win his livelihood and his pleasures by labour, and how happy therefore the peasant or artisan should feel that it was granted to him to season his meal with bitter labour, instead of, like the rich glutton, suffering the pangs of indigestion or constipation, and having to gulp down the choicest tit-bits with repugnance. These same platitudes that old Rochow thought good enough for the peasant boys and girls of the electorate of Saxony of his time, are

served up to us by Herr Dühring on page 14 and the following pages of his *Course*, as the "absolutely fundamental" basis of the most up-to-date political economy.

"Human wants as such have their natural laws, and their expansion is confined within limits which can be transgressed only by unnatural acts and only for a time, until these acts result in nausea, weariness of life, decrepitude, social mutilation and finally salutary annihilation.... A game of life consisting purely of pleasures without any further serious aim soon makes one *blasé*, or, what amounts to the same thing, exhausts all capacity to feel. Real labour, in some form or other, is therefore the natural social law of healthy beings.... If instincts and wants were not provided with counterbalances they could hardly bring us even infantile existence, let alone a historically intensified development of life. If they could find satisfaction without limit and without effort they would soon exhaust themselves, leaving an empty existence in the form of boring intervals lasting until the wants were felt again.... In every respect, therefore, the fact that the satisfaction of the instincts and passions depends on the surmounting of economic obstacles is a salutary basic law of both the external arrangement of nature and the inner constitution of man"—and so on, and so forth. It can be seen that the commonest commonplaces of the worthy Rochow are celebrating their centenary in Herr Dühring, and do so, moreover, as "the deeper foundation" of the one and only really critical and scientific "socialitarian system."

With the foundations thus laid, Herr Dühring can proceed to build. Applying the mathematical method, he first gives us, following the ancient Euclid's example, a series of definitions. This is all the more convenient because it enables him at once to contrive his definitions in such a way that what is to be proved with their

help is already partially contained in them. And so we learn at the outset that the governing concept in all prior political economy has been wealth and that wealth, as it really has been understood hitherto and as it has developed its sway in world history, is "economic power over men and things." This is doubly wrong. In the first place the wealth of the tribal and village communities of antiquity was in no sense a domination over men. And secondly, even in societies moving in class antagonisms, wealth, in so far as it includes domination over men, is mainly and almost exclusively a domination over men exercised *by virtue of*, and *through the agency of*, the domination over things. From the very early period when the capture of slaves and the exploitation of slaves became separate branches of business, the exploiters of slave-labour had to buy the slaves, acquiring control over men only through their prior control of things, of the purchase price of the slave and of his means of subsistence and instruments of labour. Throughout the Middle Ages large landed property was the prerequisite by means of which the feudal nobility came to have quit-rent peasants and corvée peasants. And nowadays even a six-year-old child sees that wealth dominates men exclusively by means of the things which it has at its disposal.

But what is it that makes Herr Dühring concoct this false definition of wealth, and why has he to sever the actual connection which existed in all former class societies? In order to drag wealth from the domain of economics over into that of morals. Domination over things is quite all right, but domination over men is an evil thing; and as Herr Dühring has forbidden himself to explain domination over men by domination over things, he can once again do an audacious trick and explain domination over men offhand by his beloved force. Wealth, as dom-

ination over men, is "robbery"—and with this we are back again at a corrupted version of Proudhon's ancient formula: "Property is theft."

And so we have now safely brought wealth under two essential aspects, production and distribution: wealth as domination over things—production wealth, the good side; wealth as domination over men—distribution wealth up to the present day, the bad side, away with it! Applied to the conditions of today, this means: The capitalist mode of production is quite good and may remain, but the capitalist mode of distribution is no good and must be abolished. Such is the nonsense which comes of writing on economics without even having grasped the connection between production and distribution.

After wealth, value is defined as follows: "Value is the worth which economic things and services have in commerce." This worth corresponds to "the price or any other equivalent name, for example, wages." In other words, value is the price. Or rather, in order not to do Herr Dühring an injustice and give the absurdity of his definition as far as possible in his own words: value are the prices. For he says on page 19: "value, and the prices expressing it in money"—thus himself stating that the same value has very different prices and consequently also just as many different values. If Hegel had not died long ago, he would hang himself; with all his theologics he could not have thought up this value which has as many different values as it has prices. It requires once more someone with the positive assurance of Herr Dühring to inaugurate new and deeper foundation for economics with the declaration that there is no difference between price and value except that one is expressed in money and the other is not.

But all this still does not tell us what value is, and still less by what it is determined. Herr Dühring has

therefore to come across with further explanations. "Speaking absolutely in general, the basic law of comparison and evaluation, on which value and the prices expressing it in money depend, belongs in the first place to the sphere of pure production, apart from distribution, which introduces only a second element into the concept of value. The greater or lesser obstacles which the variety of natural conditions places in the way of efforts directed towards the procurement of things, and owing to which it necessitates a greater or lesser expenditure of economic energy, determine also... the greater or lesser value," and this is appraised according to "the resistance offered by nature and circumstances to the procuring of things.... The extent to which we put our own energy into them (things) is the immediate determining cause of the existence of value in general and of a particular magnitude of it."

In so far as there is a meaning in this, it is: The value of a product of labour is determined by the labour-time necessary for its production; and we knew that long ago, even without Herr Dühring. Instead of stating the fact simply, he has to twist it into an oracular saying. It is simply wrong to say that the dimensions in which anyone invests his energies in anything (to keep to the bombastic style) is the immediate determining cause of value and of the magnitude of value. In the first place, it depends on what thing the energy is put into, and secondly, how the energy is put into it. If someone makes a thing which has no use-value for other people, his whole energy does not produce an atom of value; and if he is stiff-necked enough to produce by hand an object which a machine produces twenty times cheaper, nineteen-twentieths of the energy he put into it produces neither value in general nor any particular magnitude of value.

Moreover it is an absolute distortion to transform

productive labour, which creates positive products, into a merely negative overcoming of a resistance. In order to come by a shirt we should then have to set about it somewhat as follows: Firstly we overcome the resistance of the cotton-seed to being sown and to growing, then the resistance of the ripe cotton to being picked and packed and transported, then its resistance to being unpacked and carded and spun, further the resistance of the yarn to being woven, then the resistance of the cloth to being bleached and sewn, and finally the resistance of the completed shirt to being put on.

Why all this childish perversion and perversity? In order, by means of the "resistance," to pass from the "production value." the true but hitherto only ideal value, to the "distribution value," the value, falsified by force, which alone was acknowledged in past history: "In addition to the resistance offered by nature... there is yet another, a purely social obstacle.... An obstructive power steps in between man and nature, and this power is once again man. Man, conceived as alone and isolated, faces nature as a free being.... The situation is different as soon as we think of a second man who, sword in hand, holds the approaches to nature and its resources and demands a price, whatever form it may take, for allowing access. This second man..., so to speak, puts a tax on the other and is thus the reason why the value of the object striven for turns out greater than it might have been but for this political and social obstacle to the procuring or production of the object.... The particular forms of this artificially enhanced worth of things are extremely manifold, and it naturally has its concomitant counterpart in a corresponding forcing down of the worth of labour.... It is therefore an illusion to attempt to regard value in advance as an equivalent in the proper sense of this term, that is, as something which

is of equal worth, or as a relation of exchange arising from the principle that service and counter-service are equal.... On the contrary, the criterion of a correct theory of value will be that the most general cause of evaluation conceived in the theory does not coincide with the special form of worth which rests on compulsory distribution. This form varies with the social system, while economic value proper can only be a production value measured in relation to nature and in consequence of this will only change with changes in the obstacles to production of a purely natural and technical kind."

The value which a thing has in practice, according to Herr Dühring, therefore consists of two parts: first, the labour contained in it, and, secondly, the tax surcharge imposed "sword in hand." In other words, value in practice today is a monopoly price. Now if, in accordance with this theory of value, all commodities have such a monopoly price, only two alternatives are possible. Either each individual loses again as a buyer what he gained as a seller; the prices have changed nominally but in reality—in their mutual relationship—have remained the same; everything remains as before, and the far-famed distribution value is a mere illusion.

Or, on the other hand, the alleged tax surcharges represent a real sum of values, namely, that produced by the labouring, value-producing class but appropriated by the monopolist class, and then this sum of values consists merely of unpaid labour; in this event, in spite of the man with the sword in his hand, in spite of the alleged tax surcharges and the asserted distribution value, we arrive once again at the Marxian theory of *surplus-value.*

But let us look at some examples of the famous "distribution value." On page 125 and the following pages we find: "The shaping of prices as a result of individual competition must also be regarded as a form of economic

distribution and of the mutual imposition of tribute.... If the stock of any necessary commodity is suddenly reduced to a considerable extent, this gives the sellers a disproportionate power of exploitation; ... what a colossal increase in prices this may produce is shown particularly by those abnormal situations in which the supply of necessary articles is cut off for any length of time" and so on. Moreover, even in the normal course of things virtual monopolies exist which make possible arbitrary price increases, as for example the railway companies, the companies supplying towns with water and gas, etc.

It has long been known that such opportunities for monopolistic exploitation occur. But that the monopoly prices these produce are not to rank as exceptions and special cases, but precisely as classical examples of the determination of values in operation today—this is new. How are the prices of the necessaries of life determined? Herr Dühring replies: Go into a beleaguered city from which supplies have been cut off, and find out! What effect has competition on the determination of market prices? Ask the monopolists—they will tell you all about it!

For that matter, even in the case of these monopolies, the man with the sword in his hand who is supposed to stand behind them is not discoverable. On the contrary: in cities under siege, if the man with the sword, the commandant, does his duty, he, as a rule, very soon puts an end to the monopoly and requisitions the monopolized stocks for the purpose of equal distribution. Anyhow, the men with the sword, when they have tried to fabricate a "distribution value," have reaped nothing but bad business and financial loss. With their monopolization of the East Indian trade, the Dutch brought both their monopoly and their trade to ruin. The two strongest govern-

ments which ever existed, the North American revolutionary government and the French National Convention, ventured to fix maximum prices, and they failed miserably. For some years now, the Russian government has been trying to raise the exchange rate of Russian paper money—which it is lowering in Russia by the continuous emission of irredeemable banknotes—by the equally continuous buying up in London of bills of exchange on Russia. It has had to pay for this pleasure in the last few years almost sixty million rubles, and the ruble now stands at under two marks instead of over three. If the sword has the magic economic powers ascribed to it by Herr Dühring, why is it that no government has succeeded in permanently compelling bad money to have the "distribution value" of good money, or *assignats* to have the "distribution value" of gold? And where is the sword which is in command of the world market?

There is also another principal form in which the distribution value facilitates the appropriation of other people's services without counter-services: this is possession-rent, that is to say, ground-rent and the earnings of capital. For the moment we merely record this, to enable us to state that this is all that we learn of this famous "distribution value"—all? No, not quite. Listen to this:

"In spite of the twofold standpoint which manifests itself in the recognition of a production value and a distribution value, there is nevertheless always underlying these *something in common, the thing of which all values consist* and by which they are therefore measured. The immediate, natural measure is the expenditure of energy, and the simplest unit is human energy in the crudest sense of the term. This latter can be reduced to the existence time whose *self*-maintenance in turn represents the overcoming of a certain sum of difficulties in nutrition

and life. Distribution, or appropriation, value is present in pure and exclusive form only where the power to dispose of unproduced things, or, to use a commoner expression, where these things themselves are exchanged for services or things of real production value. The homogeneous element, which is indicated and represented in every expression of value and therefore also in the component parts of value which are appropriated through distribution without counter-service, consists in the expenditure of human energy, which ... finds embodiment ... in each commodity."

Now what should we say to this? If all commodity values are measured by the expenditure of human energy embodied in the commodities, what becomes of the distribution value, the price surcharge, the tax? True, Herr Dühring tells us that even unproduced things—things which consequently cannot have a real value—can be given a distribution value and exchanged against things which have been produced and possess value. But at the same time he tells us that *all values*—consequently also purely and exclusively distributive values—consist in the expenditure of energy embodied in them. Unfortunately we are not told how an expenditure of energy can find embodiment in an unproduced thing. In any case one point seems to emerge clearly from all this medley of values: that distribution value, the price surcharge on commodities extorted as a result of social position, and the tax levied by virtue of the sword all once more amount to nothing. The values of commodities are determined solely by the expenditure of human energy, *vulgo* labour, which finds embodiment in them. So, apart from ground-rent and the few monopoly prices, Herr Dühring says the same, though in more slovenly and confused terms, as the much-decried Ricardo-Marxian theory of value said long ago in clearer and more precise form.

He says it, and in the same breath he says the opposite. Marx, taking Ricardo's investigations as his starting-point, says: The value of commodities is determined by the socially necessary general human labour embodied in them, and this in turn is measured by its duration. Labour is the measure of all values, but labour itself has no value. Herr Dühring, after likewise putting forward, in his clumsy way, labour as the measure of value, continues: "This can be reduced to the existence time whose self-maintenance in turn represents the overcoming of a certain sum of difficulties in nutrition and life." Let us ignore the confusion, due purely to his desire to be original, of labour-time, which is the only thing that matters here, with existence time, which has never yet created or measured values. Let us also ignore the false "socialitarian" pretence which the "*self*-maintenance" of this existence time is intended to introduce; so long as the world has existed and so long as it continues to exist every individual must maintain himself in the sense that he *himself* consumes his means of subsistence. Let us assume that Herr Dühring expressed himself in precise economic terms; then the sentence quoted either means nothing at all or means the following: The value of a commodity is determined by the labour-time embodied in it, and the value of this labour-time by the means of subsistence required for the maintenance of the labourer for this time. And, in its application to present-day society, this means: the value of a commodity is determined by the *wages* contained in it.

And this brings us at last to what Herr Dühring is really trying to say. The value of a commodity is determined, in the phraseology of vulgar economics, by the production outlays; Carey, on the contrary, "brought out the truth that it is not the costs of production, but the costs of reproduction that determine value" (*Critical*

History, p. 401). We shall see later what there is to these production or reproduction costs; at the moment we only note that, as is well known, they consist of wages and profit on capital. Wages represent the "expenditure of energy" embodied in commodities, the production value. Profit represents the tax or price surcharge extorted by the capitalist by virtue of his monopoly, the sword in his hand—the distribution value. And so the whole contradictory confusion of the Dühringian theory of value is ultimately resolved into the most beautiful and harmonious clarity.

The determination of the value of commodities by wages, which in Adam Smith still frequently appeared side by side with its determination by labour-time, has been banned from scientific political economy since Ricardo, and nowadays survives only in vulgar economics. It is precisely the shallowest sycophants of the existing capitalist order of society who preach the determination of value by wages, and along with this, describe the profit of the capitalist likewise as a higher sort of wages, as the wages of abstinence (reward to the capitalist for not playing ducks and drakes with his capital), as the premium on risk, as the wages of management, etc. Herr Dühring differs from them only in declaring that profit is robbery. In other words, Herr Dühring bases his socialism directly on the doctrines of the worst kind of vulgar economics. And his socialism is worth just as much as this vulgar economics. They stand and fall together.

After all, it is clear that what a labourer produces and what he costs are just as much different things as what a machine produces and what it costs. The value created by a labourer in a twelve-hour working-day has nothing in common with the value of the means of subsistence which he consumes in this working-day and the period of rest that goes with it. In these means of

subsistence there may be embodied three, four or seven hours of labour-time, varying with the stage of development reached in the productivity of labour. If we assume that seven hours of labour were necessary for their production, then the theory of value of vulgar economics which Herr Dühring has accepted implies that the product of twelve hours of labour has the value of the product of seven hours of labour, that twelve hours of labour are equal to seven hours of labour, or that 12=7. To put it even more plainly: a labourer working on the land, no matter under what social relationships, produces in a year a certain quantity of grain, say sixty bushels of wheat. During this time he consumes a sum of values amounting to forty-five bushels of wheat. Then the sixty bushels of wheat have the same value as the forty-five bushels, and that in the same market and with other conditions remaining absolutely identical; in other words, sixty=forty-five. And this styles itself political economy!

The whole development of human society beyond the stage of brute savagery begins on the day when the labour of the family created more products than were necessary for its maintenance, on the day when a portion of labour could be devoted to the production no longer of the mere means of subsistence, but of means of production. A surplus of the product of labour over and above the costs, of maintenance of the labour, and the formation and enlargement, out of this surplus, of a social production and reserve fund, was and is the basis of all social, political and intellectual progress. In history, up to the present, this fund has been the possession of a privileged class, on which also devolved, along with this possession, political supremacy and intellectual leadership. The impending social revolution will for the first time make this social production and reserve fund—that is, the total mass of raw materials, instruments

of production and means of subsistence—a really social fund, by depriving that privileged class of the disposal of it and transferring it to the whole of society as its common property.

Of two alternative courses, one. Either the value of commodities is determined by the costs of maintenance of the labour necessary for their production—that is, in present-day society, by the wages. In that case each labourer receives *in his wages the value of the product of his labour*; and then the exploitation of the wage-earning class by the capitalist class is an impossibility. Let us assume that the costs of maintenance of a labourer in a given society can be expressed by the sum of three shillings. Then the product of a day's labour, according to the above-cited theory of the vulgar economists, has the value of three shillings. Let us assume that the capitalist who employs this labourer, adds a profit to this product, a tribute of one shilling, and sells it for four shillings. The other capitalists do the same. But from that moment the labourer can no longer cover his daily needs with three shillings, but also requires four shillings for this purpose. As all other conditions are assumed to have remained unchanged, the wages expressed in means of subsistence must remain the same, while the wages expressed in money must rise, namely, from three shillings to four shillings a day. What the capitalists take from the working class in the form of profit, they must give back to it in the form of wages. We are just where we were at the beginning: if wages determine value, no exploitation of the worker by the capitalist is possible. But the formation of a surplus of products is also impossible, for, on the basis of the assumption from which we started, the labourers consume just as much value as they produce. And as the capitalists produce no value, it is impossible to see how they expect to live. And if such a surplus of

production over consumption, such a production and reserve fund, nevertheless exists, and exists in the hands of the capitalists, no other possible explanation remains but that the workers consume for their self-maintenance merely the *value* of the commodities, and have handed over the commodities themselves to the capitalist for further use.

Or, on the other hand, if this production and reserve fund does in fact exist in the hands of the capitalist class, if it has actually arisen through the accumulation of profit (for the moment we leave ground-rent out of account) then it necessarily consists of the accumulated surplus of the product of labour handed over to the capitalist class by the working class, over and above the sum of wages paid to the working class by the capitalist class. In this case, however, it is not wages that determine value, but the quantity of labour; in this case the working class hands over to the capitalist class in the product of labour a greater quantity of value than it receives from it in the shape of wages; and then the profit on capital, like all other forms of appropriation without payment of the labour product of others, is explained as a simple component part of this surplus-value discovered by Marx.

Incidentally, in Dühring's whole course of political economy there is no mention of that great and epoch-making discovery with which Ricardo opens his most important work: "The value of a commodity . . . depends on the relative quantity of labour which is necessary for its production, and not on the greater or less compensation which is paid for that labour."[1] In the *Critical History* it is dismissed with the oracular phrase: "It is not considered (by Ricardo) that the greater or lesser pro-

[1] Ricardo: *Principles of Political Economy.—Ed.*

portion in which wages can be an allotment of the necessaries of life (!) must also involve ... different forms of the value relationships!"—a phrase into which the reader can read what he pleases, and is on safest ground if he reads into it nothing at all.

And now let the reader select for himself, from the five sorts of value served up to us by Herr Dühring, the one that he likes best: the production value, which comes from nature; or the distribution value, which man's wickedness has created and is distinguished by the fact that it is measured by the expenditure of energy, which is not contained in it; or thirdly, the value which is measured by labour-time; or fourthly, the value which is measured by the costs of reproduction; or lastly, the value which is measured by wages. The selection is wide, the confusion complete, and the only thing left for us to do is to exclaim with Herr Dühring: "The theory of value is the touchstone of the worth of economic systems!"

VI

SIMPLE AND COMPOUND LABOUR

Herr Dühring has discovered in Marx a gross blunder in economics that a schoolboy would blush at, a blunder which at the same time contains a socialist heresy very dangerous to society. Marx's theory of value is "nothing but the ordinary . . . theory that labour is the cause of all values and labour-time is their measure. But the question of how the distinct value of so-called skilled labour is to be conceived is left in complete obscurity. It is true that in our theory also only the labour-time expended can be the measure of the natural cost and therefore of the absolute value of economic things; but here the labour-time of each individual must be considered absolutely equal, to start with, and it is only necessary to examine how far, in skilled production, the labour-time of other persons . . . for example in the tool used, is added to the separate labour-time of the individual. Therefore the position is not, as in Herr Marx's hazy conception, that the labour-time of one person is in itself more valuable than that of another, because more average labour-time is condensed as it were within it, but all labour-time is in principle and without exception—and therefore without any need to take first an average—absolutely equal in value; and in regard to the work done by a person, as also in regard to every finished product, all that requires to be ascertained is how much of the labour-time of other persons may be concealed in what appears to be only

his own labour-time. Whether it is a hand tool for production, or the hand, or even the head itself, which could not have acquired its special characteristics and capacity for work without the labour-time of others, is not of the slightest importance in the strict application of the theory. In his lucubrations on value, however, Herr Marx never rids himself of the ghost of a skilled labour-time which lurks in the background. He was unable to effect a thoroughgoing change here because he was hampered by the traditional mode of thought of the educated classes, to whom it necessarily appears monstrous to recognize the labour-time of a porter and that of an architect as of absolutely equal value from the standpoint of economics."

The passage in Marx which calls forth this "mighty wrath" on Herr Dühring's part is very brief. Marx is examining what it is that determines the value of *commodities* and gives the answer: the human labour embodied in them. This, he continues, "is the expenditure of simple labour-power which, on an average, apart from any special development, exists in the organism of every ordinary individual.... Skilled labour counts only as simple labour intensified, or rather, as multiplied simple labour, a given quantity of skilled being considered equal to a greater quantity of simple labour. Experience shows that this reduction is constantly being made. A commodity may be the product of the most skilled labour, but its value, by equating it to the product of simple, unskilled labour, represents a definite quantity of the latter labour alone. The different proportions in which different sorts of labour are reduced to unskilled labour as their standard, are established by a social process that goes on behind the backs of the producers, and, consequently, appear to be fixed by custom."[1]

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[1] *Capital*, Vol. I, Moscow 1954, p. 44.—*Ed*

Marx is dealing here first of all only with the determination of the value of *commodities*, i.e., of objects which, within a society composed of private producers, are produced and exchanged against each other by these private producers for their private account. In this passage therefore there is no question whatever of "absolute value"—wherever this may be in existence—but of the value which is current in a definite form of society. This value, in this definite historical sense, is shown to be created and measured by the human labour embodied in the individual commodities, and this human labour is further shown to be the expenditure of simple labour-power. But not all labour is a mere expenditure of simple human labour-power; very many sorts of labour involve the use of capabilities or knowledge acquired with the expenditure of greater or lesser effort, time and money. Do these kinds of compound labour produce, in the same interval of time, the same commodity values as simple labour, the expenditure of mere simple labour-power? Obviously not. The product of one hour of compound labour is a commodity of a higher value—perhaps double or treble—in comparison with the product of one hour of simple labour. The values of the products of compound labour are expressed by this comparison in definite quantities of simple labour; but this reduction of compound labour is established by a social process which goes on behind the backs of the producers, by a process which at this point, in the development of the theory of value, can only be stated but not as yet explained.

It is this simple fact, taking place daily before our eyes in present-day capitalist society, which is here stated by Marx. This fact is so indisputable that even Herr Dühring does not venture to dispute it either in his *Course* or in his history of economics; and the Marxian presentation is so simple and lucid that no one but Herr

Dühring "is left in complete obscurity" by it. Because of his complete obscurity he mistakes the commodity value, which alone Marx was for the time being concerned with investigating, for "the natural cost," which makes the obscurity still more complete, and even for the "absolute value," which so far as our knowledge goes has never before had currency in political economy But whatever Herr Dühring may understand by the natural cost, and whichever of his five kinds of value may have the honour to represent absolute value, this much at least is sure: that Marx is not discussing any of these things, but only the value of commodities; and that in the whole section of *Capital* which deals with value there is not even the slightest indication of whether or to what extent Marx considers this theory of the value of commodities applicable also to other forms of society.

"Therefore the position is not," Herr Dühring proceeds, "as in Herr Marx's hazy conception, that the labour-time of one person is in itself more valuable than that of another, because more average labour-time is condensed as it were within it, but all labour-time is in principle and without exception—and therefore without any need to take first an average—absolutely equal in value."

It is fortunate for Herr Dühring that fate did not make him a manufacturer, and thus saved him from fixing the value of his commodities on the basis of this new rule and thereby running infallibly into the arms of bankruptcy. But say, are we here still in the society of manufacturers? No, far from it. With his natural cost and absolute value Herr Dühring has made us take a leap, a veritable *salto mortale*, out of the present evil world of exploiters into his own economic commune of the future, into the pure, heavenly air of equality and

justice; and so we must now, even though prematurely, take a glance at this new world.

It is true that, according to Herr Dühring's theory, only the labour-time expended can measure the value of economic things even in the economic commune; but as a matter of course the labour-time of each individual must be considered absolutely equal to start with, all labour-time is in principle and without exception absolutely equal in value, without any need to take first an average. And now compare with this radical equalitarian socialism hazy Marx's conception that the labour-time of one person is in itself more valuable than that of another, because more average labour-time is condensed, as it were, within it—a conception which held Marx captive by reason of the traditional mode of thought of the educated classes, to whom it necessarily appears monstrous that the labour-time of a porter and that of an architect should be recognized as of absolutely equal value from the standpoint of economics!

Unfortunately Marx put a short footnote to the passage in *Capital* cited above: "The reader must note that we are not speaking here of the *wages* or value that the labourer *gets* for a given labour-time, but of the *value of the commodity* in which that labour-time *is materialized*."[1] Marx, who seems here to have had a presentiment of the coming of his Dühring, therefore safeguards himself against an application of his statements quoted above even to the wages which are paid in existing society for compound labour. And if Herr Dühring, not content with doing this all the same, presents these statements as the principles on which Marx would like to see the distribution of the necessaries of life regulated in society organized socialistically, he is guilty of a shameless imposture,

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[1] *Capital*, Vol. I, Moscow 1954, p. 44. Italics by Engels.—*Ed.*

the like of which is only to be found in the gangster press.

But let us look a little more closely at the "doctrine of equality in values." All labour-time is entirely equal in value, the porter's and the architect's. So labour-time, and therefore labour itself, has a value. But labour is the creator of all values. It alone gives the products found in nature value in the economic sense. Value itself is nothing else than the expression of the socially necessary human labour materialized in an object. Labour *can* therefore have *no* value. One might as well speak of the value of value, or try to determine the weight, not of a heavy body, but of heaviness itself, as speak of the value of labour, and try to determine it. Herr Dühring dismisses people like Owen, Saint-Simon and Fourier by calling them social alchemists. His subtilizing over the value of labour-time, that is, of labour, shows that he ranks far beneath the real alchemists. And now let the reader fathom Herr Dühring's brazenness in imputing to Marx the assertion that the labour-time of one person is in itself more valuable than that of another, that labour-time, and therefore labour, has a value—to Marx, who first demonstrated that labour *can* have *no* value, and why it cannot!

For socialism, which wants to emancipate human labour-power from its status of a *commodity*, the realization that labour has no value and can have none is of great importance. With this realization all attempts—inherited by Herr Dühring from primitive workers' socialism—to regulate the future distribution of the necessaries of life as a kind of higher wages fall to the ground. And from it comes the further realization that distribution, in so far as it is governed by purely economic considerations, will be regulated by the interests of production, and that production is most encouraged by a

mode of distribution which allows *all* members of society to develop, maintain and exercise their capacities with maximum universality. It is true that, to the mode of thought of the educated classes which Herr Dühring has inherited, it must seem monstrous that in time to come there will no longer be any professional porters or architects, and that the man who for half an hour gives instructions as an architect will also act as a porter for a period, until his activity as an architect is once again required. A fine sort of socialism that would be—perpetuating professional porters!

If the equality of value of labour-time means that each labourer produces equal values in equal periods of time, without there being any need to take an average, then this is obviously wrong. If we take two workers, even in the same branch of industry, the value they produce in one hour of labour-time will always vary with the intensity of their labour and their skill—and not even an economic commune, at any rate not on our planet, can remedy this evil—which, however, is only an evil for people like Dühring. What, then, remains of the complete equality of value of any and every labour? Nothing but the purely braggart phrase, which has no other economic foundation than Herr Dühring's incapacity to distinguish between the determination of value by labour and determination of value by wages—nothing but the ukase, the basic law of the new economic commune: Equal wages for equal labour-time! Indeed, the old French communist workers and Weitling had much better reasons for the equality of wages which they advocated.

How then are we to solve the whole important question of the higher wages paid for compound labour? In a society of private producers, private individuals or their families pay the costs of training the qualified worker; hence the higher price paid for qualified labour-power

accrues first of all to private individuals: the skilful slave is sold for a higher price, and the skilful wage-earner is paid higher wages. In a socialistically organized society, these costs are borne by society, and to it therefore belong the fruits, the greater values produced by compound labour. The worker himself has no claim to extra pay. And from this, incidentally, follows the moral that at times there is a drawback to the popular demand of the workers for "the full proceeds of labour."

VII

CAPITAL AND SURPLUS-VALUE

"To begin with, Herr Marx does not hold the accepted economic view of capital, namely, that it is a means of production already produced; on the contrary, he tries to get up a more special, dialectical-historical idea that toys with metamorphoses of concepts and history. According to him, capital is born of money; it forms a historical phase opening with the sixteenth century, that is, with the first beginnings of a world market, which presumably appeared at that period. It is obvious that the keenness of national-economic analysis is lost in such a conceptual interpretation. In such barren conceptions, which are represented as half historical and half logical, but which in fact are only bastards of historical and logical fantasy, the faculty of discernment perishes, together with all honesty in the use of concepts"—and so he blusters along for a whole page.... "Marx's definition of the concept of capital can only cause confusion in the strict theory of national economy ... frivolities which are palmed off as profound logical truths ... the fragility of foundations"—and so forth.

So according to Marx, we are told, capital was born of money at the beginning of the sixteenth century. This is like saying that fully three thousand years ago metal money was born of cattle, because once upon a time cattle, among other things, functioned as money. Only Herr Dühring is capable of such a crude and inept man-

ner of expressing himself. In the analysis which Marx makes of the economic forms within which the process of the circulation of commodities takes place, money appears as the final form. "This final product of the circulation of commodities is the *first form in which capital appears.* As a matter of history, capital, as opposed to landed property, invariably takes the form at first of money; it appears as moneyed wealth, as the capital of the merchant and of the usurer.... We can see it daily under our very eyes. All new capital, to commence with, comes on the stage, that is, on the market, whether of commodities, labour, or money, even in our days, in the shape of money that by a definite process has to be transformed into capital."[1]

Here once again Marx is stating a fact. Unable to dispute it, Herr Dühring distorts it: Capital, he has Marx say, is born of money!

Marx then investigates the processes by which money is transformed into capital, and finds, first, that the form in which money circulates as capital is the inversion of the form in which it circulates as the general equivalent of commodities. The simple owner of commodities sells in order to buy; he sells what he does not need, and with the money thus procured he buys what he does need. The incipient capitalist starts by buying what he does *not* need himself; he buys in order to sell, and to sell at a higher price, in order to get back the value of the money originally thrown into the transaction, augmented by an increment in money; and Marx calls this increment *surplus-value.*

Whence comes this surplus-value? It cannot come either from the buyer buying the commodities under their value, or from the seller selling them above their value.

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1 *Capital*, Vol. I, Moscow 1954, p. 146. Italics by Engels.—*Ed.*

For in both cases the gains and the losses of each individual cancel each other, as each individual is in turn buyer and seller. Nor can it come from cheating, for though cheating can enrich one person at the expense of another, it cannot increase the total sum possessed by both, and therefore cannot augment the sum of the values in circulation. "The capitalist class, as a whole, in any country, cannot over-reach themselves."[1]

And yet we find that in each country the capitalist class as a whole is continuously enriching itself before our eyes, by selling dearer than it had bought, by appropriating to itself surplus-value. We are therefore just where we were at the start: whence comes this surplus-value? This problem must be solved, and it must be solved in a *purely economic* way, excluding all cheating and the intervention of any force—the problem being: how is it possible constantly to sell dearer than one has bought, even on the hypothesis that equal values are always exchanged for equal values?

The solution of this problem was the most epoch-making achievement of Marx's work. It spread the clear light of day through economic domains in which Socialists no less than bourgeois economists previously groped in utter darkness. Scientific socialism dates from the discovery of this solution and has been built up around it.

This solution is as follows: The increase in value of money that is to be converted into capital cannot take place in the *money* itself, nor can it originate in the *purchase*, as here this money does no more than realize the price of the commodity, and this price, inasmuch as we took as our premise an exchange of equivalents, is not different from its value. For the same reason, the increase in value cannot originate in the *sale* of the commodity.

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[1] *Capital*, Vol. I, Moscow 1954, p. 163.—*Ed.*

The change must, therefore, take place in the *commodity* bought; not however in its *value*, as it is bought and sold at its value, but in its *use-value* as such, that is, the change of value must originate in the consumption of the commodity. "In order to be able to extract value from the consumption of a commodity, our friend, Moneybags, must be so lucky as to find . . . in the market, a commodity, whose use-value possesses the peculiar property of being a source of value, whose actual consumption, therefore, is itself an embodiment of labour, and, consequently, a *creation of value*. The possessor of money does find on the market such a special commodity in capacity for labour or *labour-power*."[1] Though, as we saw, labour as such can have no value, this is by no means the case with labour-*power*. This acquires a value from the moment that it becomes a *commodity*, as it is in fact at the present time, and this value is determined "as in the case of every other commodity, by the labour-time necessary for the production, and consequently also the reproduction, of this special article"[2]; that is to say, by the labour-time necessary for the production of the means of subsistence which the labourer requires for his maintenance in a fit state to work and for the perpetuation of his race. Let us assume that these means of subsistence represent six hours of labour-time daily. Our incipient capitalist, who buys labour-power for carrying on his business, i.e., hires a labourer, consequently pays this labourer the full value of his day's labour-power if he pays him a sum of money which also represents six hours of labour. And as soon as the labourer has worked six hours in the employment of the incipient capitalist, he has fully reimbursed the latter for his outlay, for the value of the day's labour-

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[1] *Capital*, Vol. I, Moscow 1954, p. 167. Italics by Engels.—*Ed.*

[2] *Ibid.*, pp. 170-71.—*Ed.*

power which he had paid. But so far the money would not have been converted into capital; it would not have produced any surplus-value. And for this reason the buyer of labour-power has quite a different notion of the nature of the transaction he has carried out. The fact that only six hours' labour is necessary to keep the labourer alive for twenty-four hours, does not in any way prevent him from working twelve hours out of the twenty-four. The value of the labour-power, and the value which that labour-power creates in the labour-process, are two different magnitudes. The owner of the money has paid the value of a day's labour-power; his, therefore, is the use of it for a day—a whole day's labour. The circumstance that the value which the use of it during one day *creates* is double its own value for a day is a piece of especially good luck for the buyer, but according to the laws of exchange of commodities by no means an injustice to the seller. On our assumption, therefore, the labourer each day *costs* the owner of money the value of the product of six hours' labour, but he *hands over* to him each day the value of the product of twelve hours' labour. The difference in favour of the owner of the money is—six hours of unpaid surplus-labour, a surplus-product for which he does not pay and in which six hours' labour is embodied. The trick has been performed. Surplus-value has been produced; money has been converted into capital.

In thus showing how surplus-value arises, and how alone surplus-value can arise under the domination of the laws regulating the exchange of commodities, Marx exposed the mechanism of the existing capitalist mode of production and of the mode of appropriation based on it; he revealed the core around which the whole existing social order has crystallized.

However, this creation of capital requires that one essential prerequisite condition be fulfilled: "For the con-

version of his money into capital . . . the owner of money must meet in the market with the *free labourer*, free in the double sense, that as a free man he can dispose of his labour-power as his own commodity, and that on the other hand he has no other commodity for sale, is short of everything necessary for the realization of his labour-power."[1] But this relation between the owners of money or of commodities on the one hand, and those who possess nothing beyond their own labour-power on the other, is not a natural relation, nor is it one that is common to all historical periods: "It is clearly the result of a past historical development, the product . . . of the extinction of a whole series of older forms of social production."[2] And in fact we first encounter this free labourer on a mass scale in history at the end of the fifteenth and the beginning of the sixteenth century, as a result of the dissolution of the feudal mode of production. With this, however, and with the bringing into being of world trade and the world market dating from the same epoch, the basis was established on which the mass of the existing movable wealth was necessarily more and more converted into capital, and the capitalist mode of production, aimed at the creation of surplus-value, necessarily became more and more exclusively the prevailing mode.

Up to this point, we have been following the "barren conceptions" of Marx, these "bastards of historical and logical fantasy" in which "the faculty of discernment perishes, together with all honesty in the use of concepts." Let us contrast these "frivolities" with the "profound logical truths" and the "definitive and most strictly scientific treatment in the sense of the exact disciplines," such as Herr Dühring offers us.

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[1] *Capital*, Vol. I, Moscow 1954, p. 169. Italics by Engels.—*Ed.*
[2] *Ibid.*—*Ed.*

So Marx "does not hold the accepted economic view of capital, namely, that it is a means of production already produced"; he says, on the contrary, that a sum of values is converted into capital only when it *creates value*, when it forms surplus-value. And what does Herr Dühring say? "Capital is a basis of means of economic power for the continuation of production and for *the formation of shares in the fruits of the general labour-power*." However oracularly and slovenly that too is expressed, this much at least is certain: the basis of means of economic power may continue production to eternity, but according to Herr Dühring's own words it will not become capital so long as it does not form "shares in the fruits of the general labour-power"—that is to say, form surplus-value or at least surplus-product. Herr Dühring therefore not only himself commits the sin with which he charges Marx—of not holding the accepted economic view of capital—but besides commits a clumsy plagiarism of Marx, "badly concealed" by high-sounding phrases.

On page 262 this is further developed: "Capital in the social sense" (and Herr Dühring still has to discover a capital in a sense which is not social) "is in fact specifically different from the mere means of production; for while the latter have only a technical character and are necessary under all conditions, the former is distinguished by its social power of appropriation and the formation of shares. It is true that social capital is to a great extent nothing but the technical means of production *in their social function*; but it is precisely this function which ... must disappear." When we reflect that it was precisely Marx who first drew attention to the "social function" by virtue of which alone a sum of values becomes capital, it will certainly "at once be clear to every attentive investigator of the subject that Marx's definition of the concept of capital can only cause confusion"

—not, however, as Herr Dühring thinks, in the strict theory of national economy but, as is evident, simply and solely in the head of Herr Dühring himself, who in the *Critical History* has already forgotten how much use he made of the said concept of capital in his *Course.*

However, Herr Dühring is not content with borrowing from Marx the latter's definition of capital, though in a "purified" form. He is obliged to follow Marx also in the "toying with metamorphoses of concepts and history," in spite of his own better knowledge that nothing could come of it but "barren conceptions," "frivolities," "fragility of the foundations" and so forth. Whence comes this "social function" of capital, which enables it to appropriate the fruits of others' labour and which alone distinguishes it from mere means of production? Herr Dühring says that it does not depend "on the nature of the means of production and their technical indispensability." It therefore arose historically, and on page 252 Herr Dühring only tells us again what we have heard ten times before, when he explains its origin by means of the old familiar adventures of the two men, one of whom at the dawn of history converted his means of production into capital by the use of force against the other. But not content with ascribing a historical beginning to the social function through which alone a sum of values becomes capital, Herr Dühring prophesies that it will also have a historical end. It is "precisely this that must disappear." In ordinary parlance it is customary to call a phenomenon which arose historically and disappears again historically, "a historical phase." Capital, therefore, is a historical phase not only according to Marx but also according to Herr Dühring, and we are consequently forced to the conclusion that we are among Jesuits here. When two people do the same thing, then it is not the same. When Marx says that capital is a historical phase,

that is a barren conception, a bastard of historical and logical fantasy, in which the faculty of discernment perishes, together with all honesty in the use of concepts. When Herr Dühring likewise presents capital as a historical phase, that is proof of the keenness of his national-economic analysis and of his definitive and most strictly scientific treatment in the sense of the exact disciplines.

What is it then that distinguishes the Dühringian conception of capital from the Marxian?

"Capital," says Marx, "has not invented surplus-labour. Wherever a part of society possesses the monopoly of the means of production, the labourer, free or not free, must add to the working-time necessary for his own maintenance an extra working-time in order to produce the means of subsistence for the owners of the means of production."[1] Surplus-labour, labour beyond the time required for the labourer's own maintenance, and appropriation by others of the product of this surplus-labour, the exploitation of labour, is therefore common to all forms of society that have existed hitherto, in so far as these have moved in class antagonisms. But it is only when the product of this surplus-labour assumes the form of surplus-value, when the owner of the means of production finds the free labourer—free from social fetters and free from possessions of his own—as an object of exploitation, and exploits him for the purpose of the production of *commodities*—it is only then, according to Marx, that the means of production assume the specific character of capital. And this first took place on a large scale at the end of the fifteenth and the beginning of the sixteenth century.

Herr Dühring on the contrary declares that *every* sum of means of production which "forms shares in the

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[1] *Capital*, Vol. I, Moscow 1954, p. 235.—*Ed.*

fruits of the general labour-power," that is, yields surplus-labour in any form, is capital. In other words, Herr Dühring annexes the surplus-labour discovered by Marx, in order to use it to kill the surplus-value, likewise discovered by Marx, which for the moment does not suit his purpose. According to Herr Dühring, therefore, not only the movable and immovable wealth of the Corinthian and Athenian citizens, built on a slave economy, but also the wealth of the large Roman landowners of the time of the empire, and equally the wealth of the feudal barons of the Middle Ages, in so far as it in any way served production—all this without distinction is capital.

So that Herr Dühring himself does not hold "the accepted view of capital, namely, that it is a means of production already produced," but rather one that is the very opposite of it, a view which includes in capital even means of production which have not been produced, the earth and its natural resources. The idea, however, that capital is simply "produced means of production" is once again the accepted view only in vulgar political economy Outside of this vulgar economics, which Herr Dühring holds so dear, the "produced means of production" or any sum of values whatever, becomes capital only by yielding profit or interest, i.e., by appropriating the surplus-product of unpaid labour in the form of surplus-value, and, moreover, by appropriating it in these two definite subforms of surplus-value. It is of absolutely no importance that the whole of bourgeois economy is still labouring under the idea that the property of yielding profit or interest is inherent in every sum of values which is utilized under normal conditions in production or exchange. In classical political economy, capital and profit, or capital and interest, are just as inseparable, stand in the same reciprocal relations to each other, as cause and effect,

father and son, yesterday and today. The word "capital" in its modern economic meaning is first met with, however, at the time when the thing itself makes its appearance, when movable wealth acquires, to a greater and greater extent, the function of capital, by exploiting the surplus-labour of free labourers for the production of commodities; and in fact it was introduced by the first nation of capitalists in history, the Italians of the fifteenth and sixteenth centuries. And if Marx was the first to make a fundamental analysis of the mode of appropriation characteristic of modern capital; if he brought the concept of capital into harmony with the historical facts from which, in the last analysis, it had been abstracted, and to which it owed its existence; if by so doing Marx cleared this economic concept of those obscure and vacillating ideas which still clung to it even in classical bourgeois political economy and among the former Socialists—then it was Marx who applied that "definitive and most strictly scientific treatment" about which Herr Dühring is so constantly talking and which we so painfully miss in his works.

In actual fact, Herr Dühring's treatment is quite different from this. He is not content with first inveighing against the presentation of capital as a historical phase by calling it a "bastard of historical and logical fantasy" and then himself presenting it as a historical phase. He also roundly declares that *all* means of economic power, *all* means of production which appropriate "shares in the fruits of the general labour-power"—and therefore also landed property in all class societies—are capital; which however does not in the least prevent him, in the further course of his exposition, from separating landed property and ground-rent, quite in the traditional manner, from capital and profit, and designating as capital only those means of production which yield profit or interest, as he

does at considerable length on page 116 and the following pages of his *Course*. With equal justice Herr Dühring might first include under the name "locomotive" also horses, oxen, asses and dogs, on the ground that these, too, can be used as means of transport, and reproach modern engineers with limiting the name locomotive to the modern steam-engine and thereby setting it up as a historical phase, using barren conceptions, bastards of historical and logical fantasy and so forth; and then finally declare that horses, asses, oxen and dogs are nevertheless excluded from the term locomotive, and that this term is applicable only to the steam-engine.

And so once more we are compelled to say that it is precisely the Dühringian conception of capital in which all keenness of national-economic analysis is lost and the faculty of discernment perishes, together with all honesty in the use of concepts; and that the barren conceptions, the confusion, the frivolities palmed off as profound logical truths and the fragility of the foundations are to be found in full bloom precisely in Herr Dühring's work.

But all that is of no consequence. For Herr Dühring's is the glory nevertheless of having discovered the axis on which all economics, all politics and jurisprudence, in a word, all history, has hitherto revolved. Here it is:

"Force and labour are the two principal factors which come into play on forming social connections."

In this one sentence we have the complete constitution of the economic world up to the present day. It is extremely short, and runs:

Article One: Labour produces.

Article Two: Force distributes.

And this, "speaking in plain human language," sums up the whole of Herr Dühring's economic wisdom.

VIII

CAPITAL AND SURPLUS-VALUE

(Conclusion)

"In Herr Marx's view, wages represent only the payment of that labour-time during which the labourer is actually working to make his own existence possible. But only a small number of hours is required for this purpose; all the rest of the working-day, often so prolonged, yields a surplus in which is contained what our author calls 'surplus-value,' or, expressed in everyday language, the earnings of capital. If we leave out of account the labour-time which at each stage of production is already contained in the instruments of labour and in the pertinent raw material, this surplus part of the working-day is the share which falls to the capitalist entrepreneur. The prolongation of the working-day is consequently earnings of pure exploitation for the benefit of the capitalist."

According to Herr Dühring, therefore, Marx's surplus-value would be nothing more than what, expressed in everyday language, is known as the earnings of capital, or profit. Let us see what Marx says himself. On page 195 of *Capital*,[1] surplus-value is explained in the following words placed in brackets after it: "interest, profit, rent." On page 210,[2] Marx gives an example in which a

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[1] *Capital*, Vol. I, Moscow 1954, p. 206.—*Ed.*

[2] *Ibid.*, p. 220.—*Ed.*

total surplus-value of £3.11.0. appears in the different forms in which it is distributed: tithes, rates and taxes, 21s.; rent 28s.; farmer's profit and interest, 22s.; together making a total surplus-value of £3.11.0. On page 542,[1] Marx points out as one of Ricardo's main shortcomings that "he has not ... investigated surplus-value as such, i.e., independently of its particular forms, such as profit, rent, etc.," and that he therefore lumps together the laws of the rate of surplus-value and the laws of the rate of profit; against this Marx announces: "I shall show in Book III that, with a given rate of surplus-value, we may have any number of rates of profit, and that various rates of surplus-value may, under given conditions, express themselves in a single rate of profit." On page 587[2] we find: "The capitalist who produces surplus-value—i.e., who extracts unpaid labour directly from the labourers, and fixes it in commodities, is, indeed, the first appropriator, but by no means the ultimate owner, of this surplus-value. He has to share it with capitalists, with landowners, etc., who fulfil other functions in the complex of social production. Surplus-value, therefore, splits up into various parts. Its fragments fall to various categories of persons, and take various forms, independent the one of the other, such as profit, interest, merchants' profit, rent, etc. It is only in Book III that we can take in hand these modified forms of surplus-value." And there are many other similar passages.

It is impossible to express oneself more clearly. On each occasion Marx calls attention to the fact that his surplus-value must not be confounded with profit or the earnings of capital; that this latter is rather a subform and frequently even only a fragment of surplus-value.

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[1] *Ibid.*, p. 524.—*Ed.*
[2] *Ibid.*, p. 564.—Ed.

And if in spite of this Herr Dühring asserts that Marxian surplus-value, "expressed in everyday language, is the earnings of capital"; and if it is an actual fact that the whole of Marx's book turns on surplus-value—then there are only two possibilities: Either Herr Dühring does not know any better, and then it is an unparalleled act of impudence to decry a book of whose main content he is ignorant; or he knows what it is all about, and in that case he has committed a deliberate act of falsification.

To proceed: "The venomous hatred with which Herr Marx presents this conception of the business of extortion is only too understandable. But even mightier wrath and even fuller recognition of the exploitative character of the economic form which is based on wage-labour is possible without accepting the theoretical position expressed in Marx's doctrine of surplus-value."

The well-meant but erroneous theoretical position taken up by Marx stirs in him a venomous hatred against the business of extortion; but in consequence of his false "theoretical position" the emotion, in itself ethical, receives an unethical expression, manifesting itself in ignoble hatred and low venomousness, while the definitive and most strictly scientific treatment by Herr Dühring expresses itself in ethical emotion of a correspondingly noble nature, in wrath which even in form is ethically superior and in venomous hatred is also quantitatively superior, is a mightier wrath. While Herr Dühring is gleefully admiring himself in this way, let us see where this mightier wrath stems from.

We read on: "Now the question arises, how the competing entrepreneurs are able constantly to realize the full product of labour, including the surplus-product, at a price so far above the natural outlays of production as is indicated by the ratio, already mentioned, of the surplus

labour-hours. No answer to this is to be found in Marx's theory, and for the simple reason that there could be no place in it for even raising that question. The luxury character of production based on hired labour is not seriously dealt with at all, and the social constitution with its exploitatory features is in no way recognized as the ultimate basis of white slavery. On the contrary, political and social matters are always to be explained by economics."

Now we have seen from the above passages that Marx does not at all assert that the industrial capitalist, who first appropriates the surplus-product, sells it regardless of circumstances on the average at its full value, as is here assumed by Herr Dühring. Marx says expressly that merchants' profit also forms a part of surplus-value, and on the assumptions made this is only possible when the manufacturer sells his product to the merchant *below* its value, and thus relinquishes to him a part of the booty. The way the question is put here, there clearly could be no place in Marx for even raising it. Stated in a rational way, the question is: How is surplus-value transformed into its subforms: profit, interest, merchants' profit, ground-rent, and so forth? And Marx, to be sure, promises to settle this question in the third book. But if Herr Dühring cannot wait until the second volume of *Capital*[1] appears, he should in the meantime take a closer look at the first volume. In addition to the passages already quoted, he would then see, for example on p. 323,[2] that according to Marx the immanent laws of capitalist production assert themselves in the external movements of individual masses of capital as coercive laws of compe-

[1] Marx planned to have the second volume include the second and third books of *Capital*, but subsequently the third book appeared separately as Volume III.—*Ed.*

[2] *Capital*, Vol. I, Moscow 1954, p. 316.—*Ed.*

tition, and in this form are brought home to the mind and consciousness of the individual capitalist as the directing motives of his operations; that therefore a scientific analysis of competition is not possible before we have a conception of the inner nature of capital, just as the apparent motions of the heavenly bodies are not intelligible to any but him who is acquainted with their real motions, which are not directly perceptible by the senses; and then Marx gives an example to show how in a definite case, a definite law, the law of value, manifests itself and exercises its motive power in competition. Herr Dühring might see from this alone that competition plays a leading part in the distribution of surplus-value, and with some reflection the indications given in the first volume are in fact enough to make clear, at least in its main features, the transformation of surplus-value into its subforms.

But competition is precisely what absolutely prevents Herr Dühring from understanding the process. He cannot comprehend how the competing entrepreneurs are able constantly to realize the full product of labour, including the surplus-product, at prices so far above the natural outlays of production. Here again we find his customary "strictness" of expression, which in fact is simply slovenliness. *In Marx*, the surplus-product as such has *absolutely no outlays of production*; it is the part of the product which *costs nothing* to the capitalist. If therefore the competing entrepreneurs desired to realize the surplus-product at its natural outlays of production, they would have simply *to give it away*. But do not let us waste time on such "micrological details." Are not the competing entrepreneurs every day selling the product of labour above its natural outlays of production? According to Herr Dühring, the natural outlays of production consist "in the expenditure of labour or energy, and this in turn, in the

last analysis, can be measured by the expenditure of food"; that is, in present-day society, these costs consist in the outlays really expended on raw materials, instruments of labour, and wages, as distinguished from the "tax," the profit, the surcharge levied sword in hand. Now everyone knows that in the society in which we live the competing entrepreneurs do *not* realize their commodities at the natural outlays of production, but that they add on to these—and as a rule also receive—the so-called surcharge, the profit. The question which Herr Dühring thinks he has only to raise to blow down the whole Marxian structure—as Joshua once blew down the walls of Jericho—this question also exists for Herr Dühring's economic theory. Let us see how he answers it.

"Capital ownership," he says, "has no practical meaning, and cannot be realized, unless indirect force against human material is simultaneously incorporated in it. The product of this force is earnings of capital, and the magnitude of the latter will therefore depend on the range and intensity in which this power is exercised.... Earnings of capital are a political and social institution which exerts a more powerful influence than competition. In relation to this the capitalists act as a social estate, and each one of them maintains his position. A certain measure of earnings of capital is a necessity under the prevailing mode of economy."

Unfortunately even now we do not know how the competing entrepreneurs are able constantly to realize the product of labour above the natural outlays of production. It cannot be that Herr Dühring thinks so little of his public as to fob it off with the phrase that earnings of capital are above competition, just as the King of Prussia used to be above the law. We know the manoeuvres by which the King of Prussia attained his position above the law; the manoeuvres by which the earnings of capital succeed in

being more powerful than competition are precisely what Herr Dühring should explain to us, but what he obstinately refuses to explain. And it is of no avail, if, as he tells us, the capitalists act in this connection as an estate, and each one of them maintains his position. We surely cannot be expected to take his word for it that a number of people only need to act as an estate for each one of them to maintain his position. Everyone knows that the guildsmen of the Middle Ages and the French nobles in 1789 acted very definitely as estates and perished nevertheless. The Prussian army at Jena also acted as an estate, but instead of maintaining their position they had on the contrary to take to their heels and afterwards even to capitulate in sections. Just as little can we be satisfied with the assurance that a certain measure of earnings of capital is a necessity under the prevailing mode of economy; for the point to be proved is precisely *why* this is so. We do not get a step nearer to the goal when Herr Dühring informs us: "The domination of capital arose in close connection with the domination of land. Part of the agricultural serfs were transformed in the towns into craftsmen, and ultimately into factory material. After ground-rent, earnings of capital developed as a second form of rent of possession." Even if we ignore the historical inexactitude of this assertion, it nevertheless remains a mere assertion, and is restricted to assuring us over and over again of precisely what should be explained and proved. We can therefore come to no other conclusion than that Herr Dühring is incapable of answering his own question: how the competing entrepreneurs are able constantly to realize the product of labour above the natural outlays of production; that is to say, he is incapable of explaining the genesis of profit. He can only bluntly decree: earnings of capital shall be the product of *force*—which, true enough, is completely in

accordance with Article 2 of the Dühringian constitution of society: Force distributes. This is certainly expressed very nicely; but now "the question arises": Force distributes—what? Surely there must be something to distribute, or even the most omnipotent force, with the best will in the world, can distribute nothing. The earnings pocketed by the competing capitalists are something very tangible and solid. Force can *seize* them, but cannot *produce* them. And if Herr Dühring obstinately refuses to explain to us *how* force seizes the earnings of capitalists, the question of *whence* force takes them he meets only with silence, the silence of the grave. Where there is nothing, the king, like any other force, loses his rights. Out of nothing comes nothing, and certainly not profit. If capital ownership has no practical meaning, and cannot be realized, unless indirect force against human material is simultaneously embodied in it, then once again the question arises, first, how capital-wealth got this force—a question which is not settled in the least by the couple of historical assertions cited above; secondly, how this force is transformed into an accession of capital value, into profit; and thirdly, where it obtains this profit.

From whatever side we approach Dühringian economics, we do not get one step further. For every obnoxious phenomenon—profit, ground-rent, starvation wages, the enslavement of the workers—he has only one word of explanation: force, and ever again force, and Herr Dühring's "mightier wrath" finally resolves itself into wrath at force. We have seen, first, that this invocation of force is a lame subterfuge, a relegation of the problem from the sphere of economics to that of politics, which is unable to explain a single economic fact; and secondly, that it leaves unexplained the origin of force itself—and very prudently so, for otherwise it would have to come to the conclusion that all social power and all

political force have their source in economic preconditions, in the mode of production and exchange historically given for each society at each period.

But let us see whether we cannot wrest from the inexorable builder of "deeper foundations" of political economy some further disclosures about profit. Perhaps we shall meet with success if we apply ourselves to his treatment of wages. On page 158 we find:

"Wages are the hire paid for the maintenance of labour-power, and are at first taken into consideration only as a basis for ground-rent and earnings of capital. In order to get absolute clarity as to the relationships obtaining in this field, one must conceive ground-rent, and subsequently also earnings of capital, first historically, without wages, that is to say, on the basis of slavery or serfdom. . . . Whether it is a slave or a serf, or a wage-labourer who has to be maintained, only gives rise to a difference in the mode of charging the costs of production. *In every case the net proceeds obtained by the utilization of labour-power constitute the income of the master.* . . . It can therefore be seen that . . . the chief antithesis, by virtue of which there exists on the one hand some form of *rent of possession* and on the other hand propertyless hired labour, is not to be found exclusively in one of its members, but always only in both at the same time." Rent of possession, however, as we learn on page 188, is a phrase which covers both ground-rent and earnings of capital. Further, we find on page 174: "The characteristic feature of earnings of capital is that they are *an appropriation of the most important part of the proceeds of labour-power.* They cannot be conceived except in correlation with some form of directly or indirectly subjected labour." And on page 183: Wages "are in all circumstances nothing more than the hire by means of which, generally speaking, the labourer's maintenance and possibility of per-

petuation must be assured." And finally, on page 195: "The portion that falls to rent of possession must be lost to wages, and vice versa, the portion of the general productive capacity (!) that reaches labour must necessarily be taken from the revenues of possession."

Herr Dühring leads us from one surprise to another. In his theory of value and the following chapters up to and including the theory of competition, that is, from page 1 to page 155, the prices of commodities or values were divided first, into natural outlays of production or the production value, i.e., the outlays on raw materials, instruments of labour and wages; and secondly, into the surcharge or distribution value, that tribute levied sword in hand for the benefit of the monopolist class—a surcharge which, as we have seen, could not in reality make any change in the distribution of wealth, for what it took with one hand it would have to give back with the other, and which, besides, in so far as Herr Dühring enlightens us as to its origin and nature, arose out of nothing and therefore consists of nothing. In the two succeeding chapters, which deal with the kinds of revenue, that is, from pages 156 to 217, there is no further mention of the surcharge. Instead of this, the value of every product of labour, that is, of every commodity, is now divided into the two following portions: first, the production costs, in which the wages paid are included; and secondly the "*net proceeds* obtained by the utilization of labour-power," which constitute the master's income. And these net proceeds have a very well-known physiognomy, which no tattooing and no house-painter's art can conceal. "In order to get absolute clarity as to the relationships obtaining in this field," let the reader imagine the passages just cited from Herr Dühring printed opposite the passages previously cited from Marx, dealing with surplus-labour, surplus-product and surplus-value, and he will find that Herr

Dühring is here, though in his own style, *directly copying* from *Capital.*

Surplus-labour, in any form, whether of slavery, serfdom or wage-labour, is recognized by Herr Dühring as the source of the revenues of all ruling classes up to now: this is taken from the much-quoted passage in *Capital*, p. 227:[1] Capital has not invented surplus-labour, and so on.

And the "net proceeds" which constitute "the income of the master"—what is that but the surplus of the labour product over and above the wages, which, even in Herr Dühring, in spite of his quite superfluous disguise of it in the term "hire," must assure, generally speaking, the labourer's maintenance and possibility of perpetuation? How can the "appropriation of the most important part of the proceeds of labour-power" be carried out except by the capitalist, as Marx shows, extorting from the labourer more labour than is necessary for the reproduction of the means of subsistence consumed by the latter; that is to say, by the capitalist making the labourer work a longer time than is necessary for the replacement of the value of the wages paid to the labourer? Thus the prolongation of the working-day beyond the time necessary for the reproduction of the labourer's means of subsistence—Marx's surplus-labour—this, and nothing but this, is what is concealed behind Herr Dühring's "utilization of labour-power"; and his "net proceeds" falling to the master—how can they manifest themselves otherwise than in the Marxian surplus-product and surplus-value? And what, apart from its inexact formulation, is there to distinguish the Dühringian rent of possession from the Marxian surplus-value? For the rest, Herr Dühring has taken the name "rent of possession" ["*Besitzrente*"] from Rodber-

[1] *Capital*, Vol. I, Moscow 1954, p. 235.—*Ed.*

tus, who included both ground-rent and the rent of capital, or earnings of capital, under the one term *rent*, so that Herr Dühring had only to add "possession" to it.[1] And so that no doubt may be left of his plagiarism, Herr Dühring sums up, in his own way, the laws of the changes of magnitude in the price of labour-power and in surplus-value which are developed by Marx in Chapter XV (page 539,[2] *et seqq.*, of *Capital*), and does it in such a manner that what falls to the rent of possession must be lost to wages, and vice versa, thereby reducing certain Marxian laws, so rich in content, to a tautology without content—for it is self-evident that of a given magnitude falling into two parts, one part cannot increase unless the other decreases. And so Herr Dühring has succeeded in appropriating the ideas of Marx in such a way that the "definitive and most strictly scientific treatment in the sense of the exact disciplines"—which is certainly present in Marx's exposition—is completely lost.

We therefore cannot avoid the conclusion that the strange commotion which Herr Dühring makes in the *Critical History* over *Capital*, and the dust he raises with the famous question that comes up in connection with surplus-value (a question which he had better have left unasked, inasmuch as he cannot answer it himself)—that all this is only a military ruse, a sly manoeuvre to cover up the gross plagiarism of Marx committed in the *Course*. Herr Dühring had in fact every reason for warning his readers not to occupy themselves with "the intricate maze which Herr Marx calls *Capital*," with the bastards of historical and logical fantasy, the confused and hazy

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[1] And not even this. Rodbertus says (*Social Letters*, Letter 2, page 59): "Rent, according to this (his) theory, is all income obtained without personal labour, solely *on the ground of possession.*" [*Note by Engels.*]

[2] *Capital*, Vol. I, Moscow 1954, p. 519 *et seqq.*—*Ed.*

Hegelian notions and jugglery, etc. The Venus against whom this faithful Eckart[1] warns the German youth had been taken by him stealthily from the Marxian preserves and brought to a safe place for his own use. We must congratulate him on these net proceeds derived from the utilization of Marx's labour-power, and on the peculiar light thrown by his annexation of Marxian surplus-value under the name of rent of possession on the motives for his obstinate (repeated in two editions) and false assertion that by the term surplus-value Marx meant only profit or earnings of capital.

And so we have to portray Herr Dühring's achievements in Herr Dühring's own words somewhat as follows:

"In Herr" Dühring's "view wages represent only the payment of that labour-time during which the labourer is actually working to make his own existence possible. But only a small number of hours is required for this purpose; all the rest of the working-day, often so prolonged, yields a surplus in which is contained what our author calls"—rent of possession. "If we leave out of account the labour-time which at each stage of production is already contained in the instruments of labour and in the pertinent raw material, this surplus part of the working-day is the share which falls to the capitalist entrepreneur. The prolongation of the working-day is consequently earnings of pure extortion for the benefit of the capitalist. The venomous hatred with which Herr" Dühring "presents this conception of the business of exploitation is only too understandable. . . ." But what is less understandable is how he will now arrive at his "mightier wrath."

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[1] A character in German folklore.—*Ed.*

IX

NATURAL LAWS OF ECONOMICS. GROUND-RENT

Up to this point we have been unable, despite our sincerest efforts, to discover how Herr Dühring, in the domain of economics, can "come forward with the claim to a new *system* which is not merely adequate for the epoch but *authoritative for the epoch.*" However, what we have not been able to discern in his theory of force and his doctrine of value and of capital, may perhaps become as clear as daylight to us when we consider the "natural laws of national economy" put forward by Herr Dühring. For, as he puts it with his usual originality and in his trenchant way, "the triumph of the higher scientific method consists in passing beyond the mere description and classification of apparently static matter and attaining living intuitions which illumine the genesis of things. Knowledge of laws is therefore the most perfect knowledge, for it shows us how one process is conditioned by another."

The very first natural law of all economics has been specially discovered by Herr Dühring. Adam Smith "curiously enough, not only did not bring out the leading part played by the most important factor in all economic development, but even completely failed to give it distinctive formulation, and thus unintentionally reduced to a subordinate role the power which placed its stamp on the development of modern Europe." This "fundamental law,

to which the leading role must be assigned, is that of the technical equipment, one might even say armament, of the natural economic energy of man." This "fundamental law" discovered by Herr Dühring reads as follows:

Law No. 1. "The productivity of the economic instruments, natural resources and human energy is increased by *inventions* and *discoveries*."

We are overcome with astonishment. Herr Dühring treats us as Molière's newly baked nobleman is treated by the wag who announces to him the news that all through his life he has been speaking prose without knowing it. That in a good many cases the productive power of labour is increased by inventions and discoveries (but also that in very many cases it is not increased, as is proved by the mass of waste-paper in the archives of every patent office in the world) we knew long ago; but we owe to Herr Dühring the enlightening information that this banality, which is as old as the hills, is the fundamental law of all economics. If "the triumph of the higher scientific method" in economics, as in philosophy, consists only in giving a high-sounding name to the first commonplace that comes to one's mind, and trumpeting it forth as a natural law or even a fundamental law, then it becomes possible for anybody, even the editors of the Berlin *Volkszeitung*, to "lay deeper foundations" and to revolutionize science. We should then "in all rigour" be forced to apply to Herr Dühring himself Herr Dühring's judgment on Plato: "If however that is supposed to be political-economic wisdom, then the author of 'the critical foundations' shares it with every person who ever had occasion to conceive an idea" or even only to babble "about anything that was obvious on the face of it." If, for example, we say animals eat, we are saying quite calmly, in our innocence, something of great import; for we only have to say that eating is the fundamental law

of all animal life, and we have revolutionized the whole of zoology.

Law No. 2. Division of Labour: "The cleaving of trades and the dissection of activities raises the productivity of labour." In so far as this is true, it also has been a commonplace since Adam Smith. *How* far it is true will be shown in Part III.

Law No. 3 "*Distance and transport* are the chief causes which hinder or facilitate the co-operation of the productive forces."

Law No. 4. "The industrial state has an incomparably greater population capacity than the agricultural state."

Law No. 5. "In economics nothing takes place without a material interest."

These are the "natural laws" on which Herr Dühring founds his new economics. He remains faithful to his method, already demonstrated in his philosophy. In economics too a few self-evident statements of the utmost banality—moreover quite often very ineptly expressed—form the axioms which need no proof, the fundamental theorems, the natural laws. Under the pretext of developing the content of these laws, which have no content, he seizes the opportunity to pour out a wordy stream of economic twaddle on the various themes whose *names* occur in these pretended laws—inventions, division of labour, means of transport, population, interests, competition, and so forth—a verbal outpouring whose flat commonplaces are seasoned only with oracular grandiloquence, and here and there with inept formulations or pretentious hair-splitting over all kinds of casuistical subtleties. Then finally we reach ground-rent, earnings of capital, and wages, and as we have dealt with only the two latter forms of appropriation in the preceding exposition, we propose now in conclusion to make a brief examination of the Dühringian conception of ground-rent.

In doing this we shall not consider those points which Herr Dühring has merely copied from his predecessor Carey; we are not concerned with Carey, nor with defending Ricardo's views on ground-rent against Carey's distortions and stupidities. We are only concerned with Herr Dühring, and he defines ground-rent as "that income which the proprietor *as such* draws from the land." The economic concept of ground-rent, which is what Herr Dühring is to explain, is straightway transferred by him into the juridical sphere, so that we are no wiser than we were before. Our constructor of deeper foundations must therefore, whether he likes it or not, condescend to give some further explanation. He compares the lease of a farm to a tenant with the loan of capital to an entrepreneur, but soon finds that there is a hitch in the comparison, like in many others. For, he says, "if one wanted to press the analogy further, the earnings left to the tenant after payment of ground-rent must correspond to the balance of earnings of capital left with the entrepreneur who puts the capital to use after he has paid interest. *But it is not customary* to regard tenants' earnings as the main income and ground-rent as a balance. . . . A proof of this difference of conception is the *fact* that in the theory of ground-rent the case of management of land by the owner is not separately treated, and no special emphasis is laid on the difference between the amount of rent in the case of a lease and where the owner produces the rent himself. *At any rate no one has found it necessary* to conceive the rent resulting from such self-management of land as divided in such a way that one portion represents as it were the interest on the landed property and the other portion the surplus earnings of enterprise. Apart from the tenant's own capital which he brings into the business, it would *seem* that his specific *earnings are mostly regarded* as a kind of wages. It is however *hazard-*

ous to assert anything on this subject, as the question has never been raised in this definite form. Wherever we are dealing with fairly large farms it can easily be seen that it will not do to treat what are specifically the farmer's earnings as wages. For these earnings are themselves based on the antithesis existing in relation to the rural labour-power, through whose exploitation that form of income is alone made possible. It is clearly *a part of the rent* which remains in the hands of the tenant and by which the *full rent*, which the owner managing himself would obtain, is reduced."

The theory of ground-rent is a part of political economy which is specifically English, and necessarily so, because it was only in England that there existed a mode of production under which rent had in fact been separated from profit and interest. In England, as is well known, large landed estates and large-scale agriculture predominate. The landlords lease their land in large, often very large, farms, to tenant-farmers who possess sufficient capital to work them and, unlike our peasants, do not work themselves but employ the labour of hinds and day-labourers on the lines of full-fledged capitalist entrepreneurs. Here, therefore, we have the three classes of bourgeois society and the form of income peculiar to each: the landlord, drawing ground-rent; the capitalist, drawing profit; and the labourer, drawing wages. It has never occurred to any English economist to regard the farmer's earnings as a kind of wages, as *seems* to Herr Dühring to be the case; even less could it be *hazardous* for such economist to assert that the farmer's profit is what it indisputably, obviously and tangibly is, namely, profit on capital. It is perfectly ridiculous to say that the question of what the farmer's earnings actually are has never been raised in this definite form. In England there has never been any necessity even to raise this question; both

question and answer have long been available, derived from the facts themselves, and since Adam Smith there has never been any doubt about them.

The case of self-management, as Herr Dühring calls it —or rather, the management of farms by bailiffs for the landowner's account, as happens most frequently in Germany—does not alter the matter. If the landowner also provides the capital and has the farm run for his own account, he pockets the profit on capital in addition to the ground-rent, as is self-understood and cannot be otherwise on the basis of the existing mode of production. And if Herr Dühring asserts that up to now no one has found it necessary to conceive the rent (he should say revenue) resulting from the owner's own management as divided into parts, this is simply untrue, and at best only proves his own ignorance once again. For example:

"The revenue derived from labour is called wages. That derived from stock, by the person who manages or employs it, is called profit.... The revenue which proceeds altogether from land is called rent, and belongs to the landlord.... When those three different sorts of revenue belong to different persons, they are readily distinguished; but when they belong to the same, they are sometimes confounded with one another, at least in common language. A gentleman *who farms* a part of his own estate, after paying the expense of cultivation, *should gain both the rent of the landlord and the profit of the farmer.* He is apt to denominate, however, his whole gain, profit, and thus confounds rent with profit, at least in common language. The greater part of our North American and West Indian planters are in this situation. They farm, the greater part of them, their own estates, and accordingly we seldom hear of the rent of a plantation,

but frequently of its profit.... A gardener who cultivates his own garden with his own hands unites in his own person the three different characters, of landlord, farmer, and labourer. His produce, therefore, should pay him the rent of the first, the profit of the second, and the wages of the third. The whole, however, is commonly considered as the earnings of his labour. Both rent and profit are, in this case, confounded with wages."

This passage is from the sixth chapter of Book I of *Adam Smith*.[1] The case of self-management was therefore investigated a hundred years ago, and the doubts and uncertainties which so worry Herr Dühring in this connection are merely due to his own ignorance.

He eventually escapes from his quandary by an audacious trick: The farmer's earnings come from the exploitation of "the rural labour-power," and are therefore obviously a "part of the rent," by which the "full rent," which really should flow into the landowner's pocket, is "reduced." From this we learn two things. Firstly, that the farmer "reduces" the rent of the landowner, so that, according to Herr Dühring, it is not, as was considered hitherto, the farmer who pays rent to the landowner, but the *landowner who pays rent to the farmer*—certainly a "from the ground up original" view. And secondly, we learn at last what Herr Dühring thinks ground-rent is: namely, the whole surplus-product obtained in farming by the exploitation of rural labour. But at this surplus-product in all economics hitherto—save perhaps for the works of a few vulgar economists—has been divided into ground-rent and profit on capital, we are compelled to note that Herr Dühring's view of ground-rent also is "not the accepted one."

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[1] The reference is to *The Wealth of Nations*.—*Ed.*

According to Herr Dühring, therefore, the only difference between ground-rent and earnings of capital is that the former is obtained in agriculture and the latter in industry or commerce. And it was of necessity that Herr Dühring arrived at such an uncritical and confused view of the matter. We saw that his starting-point was the "really historical conception," that domination over the land could be based only on domination over man. As soon, therefore, as land is cultivated by means of any form of subjugated labour, a surplus for the landlord arises, and this surplus is the rent, just as in industry the surplus-labour product beyond what the labourer earns is the profit on capital. "Thus it is clear that ground-rent exists on a considerable scale wherever and whenever agriculture is carried on by means of any of the forms of subjugation of labour." In this presentation of rent as the whole surplus-product obtained in agriculture, Herr Dühring comes up against both English farmer's profit and the division, based on English farming and recognized by all classical political economy, of that surplus-product into ground-rent and farmer's profit, and hence against the *pure*, precise conception of rent. What does Herr Dühring do? He pretends not to have the slightest inkling of the division of the surplus-product of agriculture into farmer's profit and ground-rent, and therefore of the whole rent theory of classical political economy; he pretends that the question of what farmer's profit really is has never yet been raised "in this definite form," that at issue is a subject which has never yet been investigated and about which there is no knowledge but only illusion and uncertainty. And he flees from fatal England—where, without the intervention of any theoretical school, the surplus-product of agriculture is so remorselessly divided into its elements: ground-rent and profit on capital—to the country so beloved by him, where

the Prussian *Landrecht* exercises dominion, where self-management is in full patriarchal bloom, where "the landlord understands by rent the income from his plots of land" and the Junkers' views on rent still claim to be authoritative for science—where therefore Herr Dühring can still hope to slip through with his confused ideas of rent and profit and even to find credence for his latest discovery: that ground-rent is paid not by the farmer to the landlord but by the landlord to the farmer.

X

FROM THE *CRITICAL HISTORY*

Finally, let us take a glance at the *Critical History of Political Economy*, at "that enterprise" of Herr Dühring's which, as he says, "is absolutely without precedent." It may be that here at last we shall find the definitive and most strictly scientific treatment which he has so often promised us.

Herr Dühring makes a great deal of noise over his discovery that "economic science" is "an enormously modern phenomenon" (p. 12).

In fact, Marx says in *Capital*: "Political economy... as an independent science, first sprang into being during the period of manufacture"[1]; and in the *Contribution to the Critique of Political Economy*, page 29,[2] that "classical political economy... dates from William Petty in England and Boisguillebert in France, and closes with Ricardo in the former country and Sismondi in the latter." Herr Dühring follows the path thus laid down for him, except that in his view *higher* economics begins only with the wretched abortions brought into existence by bourgeois science after the close of its classical period. On the other hand, he is fully justified in triumphantly proclaiming at the end of his introduction: "But if this enterprise, in its externally appreciable peculiarities and in the more novel portion of its content, is absolutely without prece-

[1] *Capital*, Vol. I, Moscow 1954, p. 364.—*Ed*

[2] Kerr edition, p. 56.—*Ed.*

dent, in its inner critical approaches and its general standpoint, it is even more peculiarly mine" (p. 9). It is a fact that, on the basis of both its external and its internal features, he might very well have announced his "enterprise" (the industrial term is not badly chosen) as: *The Ego and His Own.*

Since political economy, as it made its appearance in history, is in fact nothing but the scientific insight into the economics of the period of capitalist production, principles and theorems relating to it, for example, in the writers of ancient Greek society, can only be found in so far as certain phenomena—commodity production, trade, money, interest-bearing capital, etc.—are common to both societies. In so far as the Greeks make occasional excursions into this sphere, they show the same genius and originality as in all other spheres. Because of this, their views form, historically, the theoretical starting-points of the modern science. Let us now listen to what the world-historic Herr Dühring has to say.

"We have, strictly speaking, really (!) absolutely nothing positive to report of antiquity concerning scientific economic theory, and the completely unscientific Middle Ages give still less occasion for this (for this—for reporting *nothing*!). As however the fashion of vaingloriously displaying a semblance of erudition . . . has defaced the true character of modern science, notice must be taken of at least a few examples." And Herr Dühring then produces examples of a criticism which is in truth free from even the "semblance of erudition."

Aristotle's thesis: "For two-fold is the use of every object. . . . The one is peculiar to the object as such, the other is not, as a sandal which may be worn, and is also exchangeable. Both are uses of the sandal, for even he who exchanges the sandal for the money or food he is in want of, makes use of the sandal as a sandal. But not in

its natural way. For it has not been made for the sake of being exchanged." Herr Dühring maintains that this thesis is "not only expressed in a really platitudinous and scholastic way"; but those who see in it a "differentiation between use-value and exchange-value" fall besides into the "ridiculous frame of mind" of forgetting that "in the most recent period" and "in the framework of the most advanced system"—which of course is Herr Dühring's own system—nothing has been left of use-value and exchange-value.

"In Plato's writings on the state, people ... claim to have found the *modern* category of the national-economic division of labour." This was apparently meant to refer to the passage in *Capital*, Ch. XII, 5 (p. 369 of the third edition)[1] where the views of classical antiquity on the division of labour are on the contrary shown to have been "in most striking contrast" with the modern view.

Herr Dühring has nothing but sneers for Plato's presentation—one which, for his time, was full of genius—of the division of labour as the natural basis of the city (which for the Greeks was identical with the state); and this on the ground that he did not mention—though the Greek Xenophon did, Herr Dühring—the "limit" "set by the given dimensions of the market to the further differentiation of professions and the technical subdivision of special operations.... Only the conception of this limit constitutes the knowledge with the aid of which this idea, otherwise hardly fit to be called scientific, becomes a major economic truth."

It was in fact "Professor" Roscher, of whom Herr Dühring is so contemptuous, who set up this "limit" at which the idea of the division of labour is supposed first

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[1] *Capital*, Vol. I, Moscow 1954, p. 365.—*Ed.*

to become "scientific," and who therefore expressly pointed to Adam Smith as the discoverer of the law of the division of labour. In a society in which commodity production is the dominant form of production, "the market"—to adopt Herr Dühring's style for once—was always a "limit" very well known to "business people." But more than "the knowledge and instinct of routine" is needed to realize that it was not the market that created the capitalist division of labour, but that on the contrary, it was the dissolution of former social connections, and the division of labour resulting from this, that created the market (see *Capital*, Vol. 1, Ch. XXIV, 5: "Creation of the Home Market for Industrial Capital").[1]

"The role of money has at all times provided the first and main stimulus to economic (!) ideas. But what did an Aristotle know of this role? No more, clearly, than was contained in the idea that exchange through the medium of money had followed the primitive exchange by barter."

But when "an" Aristotle presumes to discover the two different *forms of the circulation* of money—the one in which it operates as a mere medium of circulation, and the other in which it operates as money capital, he is thereby—according to Herr Dühring—"only expressing a moral antipathy." And when "an" Aristotle carries his audacity so far as to attempt an analysis of money in its "role" *of a measure of value*, and actually states this problem, which has such decisive importance for the theory of money, correctly—then "a" Dühring prefers (and for very good private reasons) to say nothing about such impermissible temerity.

Final result: Greek antiquity, as mirrored in the "notice taken" by Dühring, in fact possessed "only quite

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[1] *Ibid.*, p. 745.—*Ed.*

ordinary ideas" (p. 25), if such "*niaiserie*" (p. 29) has anything whatever in common with ideas, whether ordinary or extraordinary.

It would be better to read Herr Dühring's chapter on mercantilism in the "original," that is, in F. List's *National System*, Chapter 29: "The Industrial System, Incorrectly Called the Mercantile System by the School." How carefully Herr Dühring manages to avoid here too any "semblance of erudition" is shown by the following passage, among others:

List, Chapter 28: "The Italian Political Economists," says: "Italy was in advance of all modern nations both in the practice and in the theory of political economy," and then he cites, as "the first work written in Italy, which deals especially with political economy, the book by Antonio Serra, of Naples, on the way to secure for the kingdoms an abundance of gold and silver (1613)." Herr Dühring confidently accepts this and is therefore able to regard Serra's *Breve trattato*[1] "as a kind of inscription at the entrance of the more recent prehistory of economics." His treatment of the *Breve trattato* is in fact limited to this "piece of literary buffoonery." Unfortunately, the actual facts of the case were different: in 1609, that is, four years before the *Breve trattato*, Thomas Mun's *A Discourse of Trade, etc.*,[2] had appeared. The particular significance of this book was that, even in its first edition, it was directed against the original *monetary system* which was then still defended in England as being the policy of the state; hence it represented the

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[1] *Breve trattato delle cause che possono far abbondare li regni d'oro e d'argento dove non sono miniere—A Short Discourse on the Causes Capable of Bringing about an Abundance of Gold and Silver in Countries not Possessing Mines of Their Own.—Ed.*

[2] *A Discourse of Trade from England into the East-Indies.—Ed.*

conscious *self-separation* of the mercantile system from the system which gave it birth. Even in the form in which it first appeared the book had several editions and exercised a direct influence on legislation. In the edition of 1664 (*England's Treasure, etc.*),[1] which had been completely rewritten by the author and was published after his death, it continued to be the mercantilist gospel for another hundred years. If mercantilism therefore has an epoch-making work "as a kind of inscription at the entrance," it is this book, and for this very reason it simply does not exist for Herr Dühring's "history which most carefully observes the distinctions of rank."

Of *Petty*, the founder of modern political economy, Herr Dühring tells us that there was "a fair measure of superficiality in his way of thinking" and that "he had no sense of the intrinsic and nicer distinctions between concepts," while he possessed "a versatility which knows a great deal but skips lightly from one thing to another without taking root in any idea of a more profound character"; ... his "national-economic ideas are still very crude," and he "achieves *naïvetés* whose contrasts ... a more serious thinker may well find amusing at times." What inestimable condescension, therefore, for the "more serious thinker" Herr Dühring to deign to take any notice at all of "a Petty"! And what notice does he take of him?

Petty's propositions on "labour and even labour-time as a measure of value, of which *imperfect traces* can be found in his writings," are not mentioned again apart from this sentence. Imperfect traces! In his *Treatise on Taxes and Contributions* (first edition, 1662), Petty gives a perfectly clear and correct analysis of the magnitude of value of commodities. In illustrating this

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[1] *England's Treasure by Foreign Trade.—Ed.*

magnitude at the outset by the equal value of precious metals and corn on which the same quantity of labour has been expended, he says the first and the last "theoretical" word on the value of the precious metals. But he also lays it down in a definite and general form that the values of commodities must be measured by *equal labour.* He applies his discovery to the solution of various problems, some of which are very intricate, and on various occasions and in various works, even where he does not repeat the fundamental proposition, he draws important conclusions from it. But even in his very first work he says:

"This (estimation by equal labour), I say, *to be the foundation of equalizing and balancing of values;* yet in the superstructures and practices hereupon, I confess there is much variety, and intricacy."[1] Petty was thus conscious equally of the importance of his discovery and of the difficulty of applying it in detail. He therefore tried to find another way in certain concrete cases. "A natural Par" should therefore be found between land and labour, so that value might be expressed at will "by either of them alone as well or better than by both." Even this error has genius.

Herr Dühring makes this penetrating observation on Petty's theory of value: "Had his own thought been more penetrating it would not be possible to find, in other passages, traces of a contrary view, to which we have previously referred"; that is to say, to which no "previous" reference has been made except that the "traces" are "imperfect." This is very characteristic of Herr Dühring's method—to allude to something "previously" in a meaningless phrase, in order "subsequently" to make the reader believe that he has "previously" been made

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[1] The Economic Writings of Sir William Petty, Vol. I, p. 44 (Cambridge University Press edition, 1899). Italics by Engels.—*Ed.*

acquainted with the main point, which in fact the author in question has slid over both previously and subsequently.

In Adam Smith, however, we can find not only "traces" of "contrary views" on the concept of value, not only two but even three, and strictly speaking even four sharply contrary opinions on value, running quite jollily side by side and intermingled. But what is quite natural in a writer who is laying the foundations of political economy and is necessarily feeling his way, experimenting and struggling with a chaos of ideas which are only just taking shape, may seem strange in a writer who is surveying and summarizing more than a hundred and fifty years of investigation whose results have already passed in part from books into the consciousness of the generality. And, to pass from great things to small: as we have seen, Herr Dühring himself gives us five different kinds of value to select from at will, and with them, an equal number of contrary views. Of course, "had his own thought been more penetrating," he would not have had to expend so much effort in trying to throw his readers back from Petty's perfectly clear conception of value into the uttermost confusion.

A smoothly finished work of Petty's, which may be said to be cast in a single block, is his *Quantulumcunque*[1] *Concerning Money*, published in 1682, ten years after his *Anatomy of Ireland*[2] (this "first" appeared in 1672, not 1691 as stated by Herr Dühring, who takes it second-hand from the "most current textbook compilations"). In this book the last vestiges of mercantilist views, found in other writings by him, have completely disappeared. In content and form it is a little masterpiece, and for this

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[1] A Few Words...—*Ed.*

[2] *The Political Anatomy of Ireland.*—*Ed.*

very reason Herr Dühring does not even mention its title. It is quite in the order of things that, in relation to the most brilliant and original of economic investigators, our vainglorious and pedantic mediocrity should only snarl his displeasure, and take offence at the fact that the flashes of theoretical thought do not proudly parade about in rank and file as ready-made "axioms," but merely rise sporadically to the surface from the depths of "crude" practical material, for example, of taxes.

Petty's foundations of *Political Arithmetic, vulgo* statistics, are treated by Herr Dühring in the same way as that author's specifically economic works. He malevolently shrugs his shoulders at the odd methods used by Petty! Considering the grotesque methods still employed in this field a century later even by Lavoisier, and in view of the great distance that separates even contemporary statistics from the goal which Petty assigned to them in broad outline, such self-satisfied superiority two centuries *post festum*[1] stands out in all its undisguised stupidity.

Petty's most important ideas—which received such scant attention in Herr Dühring's "enterprise"—are, in the latter's view, nothing but disconnected conceits, chance thoughts, incidental comments, to which only in our day a significance is given, by the use of excerpts torn from their context which in themselves they have not got; which therefore also play no part in the *real* history of political economy, but only in modern books below the standard of Herr Dühring's deep-rooted criticism and "historical depiction in the grand style." In his "enterprise" he seems to have had in view a circle of readers who would have implicit faith and would never be bold enough to ask for proof of his assertions. We shall

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[1] *Post festum:* after the event.—*Ed.*

return to this point soon (when dealing with Locke and North), but must first take a fleeting glance at Boisguillebert and Law.

In connection with the former, we must draw attention to the sole find made by Herr Dühring: he has discovered a connection between Boisguillebert and Law which had hitherto been missed. Boisguillebert asserts that the precious metals could be replaced, in the normal monetary functions which they fulfil in commodity circulation,[1] by credit money (*un morceau de papier*).[2] Law on the other hand imagines that any "increase" whatever in the number of these "pieces of paper" increases the wealth of a nation. Herr Dühring draws from this the conclusion that Boisguillebert's "turn of thought already harboured a new turn in mercantilism"—in other words, already included Law. This is made as clear as daylight in the following: "*All* that was necessary was to assign to the 'simple pieces of paper' the same role that the precious metals *should* have played, and a metamorphosis of mercantilism was thereby at once accomplished." In the same way it is possible to accomplish at once the metamorphosis of an uncle into an aunt. It is true that Herr Dühring adds appeasingly: "Of course Boisguillebert had no such purpose in mind." But how, in the devil's name, could he intend to replace his own rationalist conception of the money function of the precious metals by the superstitious conception of the mercantilists for the sole reason that, according to him, the precious metals can be replaced in this role by paper money?

Nevertheless, Herr Dühring continues in his seriocomic style: "nevertheless it may be conceded that here

[1] In the original: *Warenproduktion*, changed here to *Warenzirkulation* on the basis of Marx's MS, "Marginal Notes to Dühring's *Critical History of National Economy*."—*Ed.*

[2] A piece of paper.—*Ed.*

and there our author succeeded in making a really apt remark" (p. 83).

In reference to Law, Herr Dühring succeeded in making only this "really apt remark": "Law too was naturally never able completely to *eradicate* the above-named basis (namely, "the basis of the precious metals"), but he pushed the issue of notes to its extreme limit, that is to say, to the collapse of the system" (p. 94). In reality, however, these paper butterflies, mere money tokens, were intended to flutter about among the public, not in order to "eradicate" the basis of the precious metals, but to entice them from the pockets of the public into the depleted treasuries of the state.

To return to Petty and the inconspicuous role in the history of economics assigned to him by Herr Dühring, let us first listen to what we are told about Petty's immediate successors, Locke and North. Locke's *Considerations on Lowering of Interest and Raising of Money*,[1] and North's *Discourses upon Trade*, appeared in the same year, 1691.

"What he (Locke) wrote on interest and coin does not go beyond the range of the reflections, current under the dominion of mercantilism, in connection with the events of political life" (p. 64).—To the reader of this "report" it should now be clear as crystal why Locke's *Lowering of Interest* had such an important influence, in more than one direction, on political economy in France and Italy during the latter half of the eighteenth century.

"Many businessmen thought the same (as Locke) on free play for the rate of interest, and the developing situation also produced the tendency to regard restrictions on interest as ineffective. At a period when a Dudley North

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[1] *Some Considerations of the Consequences of the Lowering of Interest and Raising the Value of Money.—Ed.*

could write his *Discourses upon Trade* in the direction of free trade, a great deal must already have been in the air, as they say, which made the theoretical opposition to restrictions on interest rates seem something not at all extraordinary" (p. 64).

So Locke had only to cogitate the ideas of this or that contemporary "businessman," or to breathe in a great deal of what was "in the air, as they say" to be able to theorize on free play for the rate of interest without saying anything "extraordinary"! In fact, however, as early as 1662, in his *Treatise on Taxes and Contributions*, Petty had counterposed interest, as "rent of money which we call usury," to "rent of land and houses," and lectured the landlords, who wished to keep down by legislation not of course land rent, but the rent of money, on "the vanity and fruitlessness of making civil positive law against the law of nature." In his *Quantulumcunque* (1682) he therefore declared that legislative regulation of the rate of interest was as stupid as regulation of exports of precious metals or regulation of exchange rates. In the same work he made statements of unquestionable authority on the "raising of money" (for example, the attempt to give sixpence the name of one shilling by doubling the number of shillings coined from one ounce of silver).

As regards this last point, Locke and North did little more than copy him. In regard to interest, however, Locke followed Petty's parallel between rent of money and rent of land, while North goes further and opposes interest as "rent of stock" to land rent, and the stocklords to the landlords. And while Locke accepts free play for the rate of interest, as demanded by Petty, only with reservations, North accepts it unconditionally.

Herr Dühring—himself still a bitter mercantilist in the "more subtle" sense—surpasses himself when he dismisses Dudley North's *Discourses upon Trade* with the

comment that they were written "in the direction of free trade." It is rather like saying of Harvey that he wrote "in the direction" of the circulation of the blood. North's work—apart from its other merits—is a classical exposition, driven home with relentless logic, of the doctrine of free trade, both foreign and internal—certainly "something extraordinary" in the year 1691!

Herr Dühring, by the way, informs us that North was a "merchant" and a bad type at that, also that his work "met with no approval." Indeed! How could anyone expect a book of this sort to have met with "approval" among the mob setting the tone at the time of the final triumph of protectionism in England? But this did not prevent it from having an immediate effect on theory, as can be seen from a whole series of economic works published in England shortly after it, some of them even before the end of the seventeenth century.

Locke and North gave us proof of how the first bold strokes which Petty dealt in almost every sphere of political economy were taken up one by one by his English successors and further developed. The traces of this process during the period 1691 to 1752 are obvious even to the most superficial observer from the very fact that all the more important economic writings of that time start from Petty, either positively or negatively. That period, which abounded in original thinkers, is therefore the most important for the investigation of the gradual genesis of political economy. The "historical depiction in the grand style," which chalks up against Marx the unpardonable sin of making so much commotion in *Capital* about Petty and the writers of that period, simply strikes them right out of history. From Locke, North, Boisguillebert and Law it jumps straight to the physiocrats, and then, at the entrance to the real temple of pol-

itical economy, appears—David Hume. With Herr Dühring's permission, however, we restore the chronological order, putting Hume before the physiocrats.

Hume's economic *Essays* appeared in 1752. In the related essays: *Of Money, Of the Balance of Trade, Of Commerce,* Hume follows step by step, and often even in his personal idiosyncrasies, Jacob Vanderlint's *Money Answers All Things*, published in London in 1734. However unknown this Vanderlint may have been to Herr Dühring, references to him can be found in English economic works even at the end of the eighteenth century, that is to say, in the period after Adam Smith.

Like Vanderlint, Hume treated money as a mere token of value; he copied almost word for word (and this is important, as he might have taken the theory of money as a token of value from many other sources) Vanderlint's argument on why the balance of trade cannot be permanently either favourable or unfavourable to a country; like Vanderlint, he teaches that the equilibrium of balances is brought about naturally, in accordance with the different economic situations in the different countries; like Vanderlint, he preaches free trade, but less boldly and consistently; like Vanderlint, though with less profundity, he emphasizes wants as the motive forces of production; he follows Vanderlint in the influence on commodity prices which he erroneously attributes to bank money and government securities in general; like Vanderlint, he rejects credit money; like Vanderlint, he makes commodity prices dependent on the price of labour, that is, on wages; he even copies Vanderlint's absurd notion that by accumulating treasures commodity prices are kept down, etc., etc.

At a much earlier point Herr Dühring made an oracular allusion to how others had misunderstood Hume's monetary theory, with a particularly minatory reference

to Marx, who in *Capital* had, besides, pointed in a positively subversive way to the secret connections of Hume with Vanderlint and with J. Massie, who will be mentioned later.

As for this misunderstanding, the facts are as follows. In regard to Hume's real theory of money (that money is a mere token of value, and therefore, other conditions being equal, commodity prices rise in proportion to the increase in the volume of money in circulation, and fall in proportion to its decrease), Herr Dühring, with the best intentions in the world—though in his own luminous way—can only repeat the errors made by his predecessors. Hume, however, after propounding the theory cited above, himself raises the objection (as Montesquieu, starting from the same premises, had done previously) that nevertheless "'tis certain" that since the discovery of the mines in America "industry has increased in all the nations of Europe, except in the possessors of those mines," and that this "may justly be ascribed, amongst other reasons, to the increase of gold and silver." His explanation of this phenomenon is that "though the high price of commodities be a necessary consequence of the increase of gold and silver, yet it follows not immediately upon that increase; but some time is required before the money circulate through the whole state and make its effects be felt on all ranks of people." In this interval it has a beneficial effect on industry and trade. At the end of this analysis Hume also tells us why this is so, although in a less comprehensive way than many of his predecessors and contemporaries: "'Tis easy to trace the money in its progress through the whole commonwealth; where we shall find, that it must first quicken the diligence of every individual before it *increases the price of labour*."

In other words, Hume is here describing the effect of a revolution on the value of the precious metals, name-

ly, a depreciation, or, which is the same thing, a revolution in the *measure of value* of the precious metals. He correctly ascertains that, in the slow process of readjusting the prices of commodities, this depreciation "increases the price of labour"—*vulgo*, wages—only in the last instance; that is to say, it increases the profit made by merchants and industrialists at the cost of the labourer (which he, however, thinks is just as it should be), and thus "quickens diligence." But he does not set himself the task of answering the real scientific question, namely, whether and in what way an increase in the supply of the precious metals, their value remaining the same, affects the prices of commodities; and he lumps together *every* "increase of the precious metals" with their depreciation. Hume therefore does precisely what Marx says he does (*Contribution to the Critique of Political Economy*, p. 141). We shall come back once more to this point in passing, but we must first turn to Hume's essay on *Interest.*

Hume's arguments, expressly directed against Locke, that the rate of interest is not regulated by the amount of available money but by the rate of profit, and his other explanations of the causes which determine rises or falls in the rate of interest, are all to be found, much more exactly though less cleverly stated, in *An Essay on the Governing Causes of the Natural Rate of Interest, wherein the sentiments of Sir W. Petty and Mr. Locke, on that head, are considered.* This work appeared in 1750, two years before Hume's essay; its author was J. Massie, a writer active in various fields, who had a wide public, as can be seen from contemporary English literature. Adam Smith's discussion of the rate of interest is closer to Massie than to Hume. Neither Massie nor Hume know or say anything regarding the nature of "profit," which plays a role with both.

"In general," Herr Dühring sermonizes us, "the attitude of most of Hume's commentators has been very prejudiced, and ideas have been attributed to him which he never entertained in the least." And Herr Dühring himself gives us more than one striking example of this "attitude."

For example, Hume's essay on interest begins with the following words: "Nothing is esteemed a more certain sign of the flourishing condition of any nation than the lowness of interest: and with reason; though I believe the cause is somewhat different from what is commonly apprehended." In the very first sentence, therefore, Hume cites the view that the lowness of interest is the surest indication of the flourishing condition of a nation as a commonplace which had already become trivial in his day. And in fact this "idea" had already had fully a hundred years, since Child, to become generally current. But we are told: "Among Hume's views on the rate of interest *we must particularly draw attention to the idea* that it is the true barometer of conditions (conditions of what?) and that its lowness is an almost infallible sign of the prosperity of a nation" (p. 130). Who is the "prejudiced" and captivated "commentator" who says this? None other than Herr Dühring.

What arouses the naive astonishment of our "critical historian" is the fact that Hume, in connection with some felicitous idea or other, "does not even claim to have originated it." This would certainly not have happened to Herr Dühring.

We have seen how Hume confuses every increase of the precious metals with such an increase as is accompanied by a depreciation, a revolution in their own value, hence, in the measure of value of commodities. This confusion was inevitable with Hume because he had not the slightest understanding of the function of the precious

metals as *the measure of value.* And he could not have it, because he had absolutely no knowledge of value itself. The word itself is to be found perhaps only once in his essays, namely, in the passage where, in attempting to "correct" Locke's erroneous notion that the precious metals had "only an imaginary value," he makes it even worse by saying that they had "merely a fictitious value."

In this he is much inferior not only to Petty but to many of his English contemporaries. He shows the same "backwardness" in still proclaiming the old-fashioned notion that the "*merchant*" is the mainspring of production—an idea which Petty had long passed beyond. As for Herr Dühring's assurance that in his essays Hume concerned himself with the "chief economic relationships": if the reader only compares Cantillon's work quoted by Adam Smith (which appeared the same year as Hume's essays, 1752, but many years after its author's death), he will be surprised at the narrow field covered by Hume's economic writings. Hume, as we have said, in spite of the letters-patent issued to him by Herr Dühring, is nevertheless quite a respectable figure also in the field of political economy, but in this field he is anything but an original investigator, and even less an epoch-making one. The influence of his economic essays on the educated circles of his day was due not merely to his excellent presentation, but principally to the fact that the essays were a progressive and optimistic glorification of industry and trade, which were then flourishing—in other words, of the capitalist society which at that time was rapidly rising in England, and whose "approval" they therefore had to gain. Let one instance suffice here. Everyone knows the passionate fight that the masses of the English people were waging, just in Hume's day, against the system of indirect taxes which was being

regularly exploited by the notorious Sir Robert Walpole for the relief of the landlords and of the rich in general. In his essay *Of Taxes*, in which, without mentioning his name, Hume polemizes against his indispensable authority Vanderlint—the stoutest opponent of indirect taxation and the most determined advocate of a land tax—we read: "They (taxes on consumption) must be very heavy taxes, indeed, and very injudiciously levied, which the artisan will not, of himself, be enabled to pay, by superior industry and frugality, *without raising the price of his labour.*" It is almost as if Robert Walpole himself were speaking, especially if we also take into consideration the passage in the essay on "public credit" in which, referring to the difficulty of taxing the state's creditors, the following is said: "The diminution of their revenue would not be *disguised* under the appearance of a branch of excise or customs."

As might have been expected of a Scotchman, Hume's admiration of bourgeois acquisitiveness was by no means purely platonic. Starting as a poor man, he worked himself up to a very substantial annual income of many thousands of pounds; which Herr Dühring (as he is here not dealing with Petty) tactfully expresses in this way: "Possessed of very small means to start with he succeeded, by good *domestic economy*, in reaching the position of not having to write to please anyone." Herr Dühring further says: "He had never made the slightest concession to the influence of parties, princes or universities." There is no evidence that Hume ever entered into a literary partnership with a "Wagener,"[1] but it is well known that he was an indefatigable partisan of the Whig oligarchy, which thought highly of "*Church* and state," and that in reward

[1] A hint at Dühring's connection with the Bismarck agent Wagener, a Prussian official on whose orders Dühring drew up a memorandum on the labour question.—*Ed.*

for these services he was given first a secretaryship in the Embassy in Paris and subsequently the incomparably more important and better-paid post of an Under-Secretary of State. "In politics Hume was and always remained conservative and strongly monarchist in his views. For this reason he was never so bitterly denounced for heresy as Gibbon by the supporters of the established church," says old Schlosser. "This selfish Hume, this lying historian" reproaches the English monks with being fat, having neither wife nor family and living by begging; "but he himself never had a family or a wife and was a great fat fellow, fed, in considerable part, out of public money, without having merited it by any real public services"—this is what the "rude" plebeian Cobbett says. Hume was "in essential respects greatly superior to a Kant in the *practical* management of life," is what Herr Dühring says.

But why is Hume given such an exaggerated position in the *Critical History*? Simply because this "serious and subtle thinker" has the honour of enacting the Dühring of the eighteenth century. Hume serves as proof that "the creation of this whole branch of science (economics) is the achievement of a more enlightened philosophy"; and similarly Hume as predecessor is the best guarantee that this whole branch of science will find its close, for the immediately foreseeable future, in that phenomenal man who has transformed the merely "more enlightened" philosophy into the absolutely luminous philosophy of reality, and with whom, just as was the case with Hume, . . . "the cultivation of philosophy in the narrow sense of the word is combined—something unprecedented on German soil—with scientific endeavours on behalf of the national economy." Accordingly we find Hume, in any case respectable as an economist, inflated into an economic star of the first magnitude, whose

importance has hitherto been denied only by the same envious people who have hitherto also so obstinately hushed up Herr Dühring's achievements, "authoritative for the epoch."

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The *physiocratic* school left us in *Quesnay's Tableau Economique*, as everyone knows, a nut on which all former critics and historians of political economy have up to now broken their jaws in vain. This *Tableau*, which was intended to bring out clearly the physiocrats' conception of the production and circulation of a country's total wealth, remained obscure enough for the succeeding generations of economists. On this subject, too, Herr Dühring comes to give us definitive light. What this "economic image of the relations of production and distribution *means in Quesnay himself*," he says, can only be stated if one has "*first carefully examined* the leading ideas which are peculiar to him." All the more because these have hitherto been set forth only with "wavering indefiniteness," and their "essential features cannot be recognized," even in Adam Smith. Herr Dühring will now once and for all put an end to this traditional "superficial reporting." He then proceeds to pull the reader's leg through five whole pages, five pages in which all kinds of pretentious phrases, constant repetitions and calculated confusion are designed to conceal the awkward fact that Herr Dühring has hardly as much to tell us in regard to Quesnay's "leading ideas," as "the most current textbook compilations" against which he warns us so untiringly. It is "one of the most dubious sides" of this introduction that here too the *Tableau*, which up to that point had only been mentioned by name, is just casually snuffled at, and then gets lost in all sorts of "reflections," such as, for example "the difference between

effort and result." Though the latter, "it is true, is not to be found completed in Quesnay's ideas," Herr Dühring will give us a fulminating example of it as soon as he comes from his lengthy introductory "effort" to his remarkably short-winded "result," that is to say, to his elucidation of the *Tableau* itself. We shall now give all, *literally all* that he feels it right to tell us of Quesnay's *Tableau.*

In his "effort" Herr Dühring says: "It seemed to him (Quesnay) self-evident that the proceeds (Herr Dühring had just spoken of the net product) must be thought of and treated as a *money value*.... He connected his deliberations (!) immediately with the *money values* which he assumed as the results of the sales of all agricultural products when they first change hands. In this way (!) he operates in the columns of his *Tableau* with several milliards" (that is, of money values). We have therefore learnt three times over that, in his *Tableau,* Quesnay operates with the "money values" of "agricultural products," including the money values of the "net product" or "net proceeds." Further on in the text we find: "Had Quesnay considered things from a really natural standpoint, and had he rid himself not only of regard for the precious metals and the amount of money, but also of regard for *money values*.... But as it is he reckons solely with *sums of value,* and imagined (!) the net product in advance as a *money value.*" So for the fourth and fifth time: there are only money values in the *Tableau*!

"He (Quesnay) obtained it (the net product) by deducting the expenses and *thinking* (!) principally" (not traditional but for that matter all the more superficial reporting) "of that value which would accrue to the landlord as rent."

We have still not advanced a step; but now it is coming: "On the other hand, *however, now also*"—this "however, now also" is a gem!—"the net product, as a natural

object, enters into circulation, and in this way becomes an element which should serve... to maintain the class which is described as sterile. In this the confusion can *at once* (!) be seen—the confusion arising from the fact that in one case it is the money value, and in the other the thing itself, which determines the course of thought."

In general, it seems, *all* circulation of commodities suffers from the "confusion" that commodities enter into circulation simultaneously as "natural objects" and as "money values." But we are still moving in a circle about "money value," for "Quesnay is anxious to avoid a double booking of the national-economic proceeds."

With Herr Dühring's permission: in Quesnay's *Analysis*[1] at the foot of the *Tableau,* the various kinds of products figure as "natural objects" and above, in the *Tableau* itself, their money values are given. Subsequently Quesnay even made his famulus, the Abbé Baudeau, include the natural objects in the *Tableau* itself, *beside* their money values.

After all this "effort," we at last get the "result." Listen and marvel at these words: "Nevertheless, the inconsequence" (referring to the role assigned by Quesnay to the landlords) "*at once* becomes clear when we enquire *what becomes of the net product, which has been appropriated as rent, in the course of the national-economic circulation.* In regard to this the physiocrats and the *Tableau Economique* could offer nothing but confused and arbitrary conceptions, ascending to mysticism."

All's well that ends well. So Herr Dühring does not know "what becomes of the net product, which has been appropriated as rent, in the course of the national-economic circulation" (represented in the *Tableau*). To him, the *Tableau* is the "squaring of the circle." By his own

[1] *Analyse du Tableau Economique.—Ed.*

confession, he does not understand the ABC of physiocracy. After all the beating about the bush, the dropping of buckets into an empty well, the hying hither and thither, the harlequinades, episodes, diversions, repetitions and stupefying mix-ups whose sole purpose was to prepare us for the imposing conclusion, "what the *Tableau* means in Quesnay himself"—after all this Herr Dühring's shamefaced confession that *he himself does not know.*

Once he has shaken off this painful secret, this Horatian "black care" which sat hunched on his back during his ride through the land of the physiocrats, our "serious and subtle thinker" blows another merry blast on his trumpet, as follows: "The lines which Quesnay draws here and there" (in all there are just six of them!) "in his otherwise fairly simple (!) *Tableau*, and which are meant to represent the circulation of the net product," make one wonder whether "these whimsical combinations of columns" may not be suffused with fantastic mathematics; they are reminiscent of Quesnay's attempts to square the circle—and so forth. As Herr Dühring, by his own admission, was unable to understand these lines in spite of their simplicity, he had to follow his favourite procedure of *casting suspicion* on them. And now he can confidently deliver the *coup de grâce* to the vexatious *Tableau*: "We have considered the net product in this its *most dubious aspect*," etc. So the confession he was constrained to make that he does not understand the first word about the *Tableau économique* and the "role" played by the net product which figures in it—that is what Herr Dühring calls "the most dubious aspect of the net product"! What grim humour!

But in order that our readers may not be left in the same cruel ignorance about Quesnay's *Tableau* as those necessarily are who receive their economic wisdom "first

hand" from Herr Dühring, we will explain it briefly as follows:

As is known, the physiocrats divide society into three classes: (1) The productive, i.e., the class which is actually engaged in agriculture—tenant-farmers and agricultural labourers; they are called productive, because their labour yields a surplus: rent. (2) The class which appropriates this surplus, including the landowners and their retainers, the prince and in general all officials paid by the state, and finally also the Church in its special character as appropriator of tithes. For the sake of brevity, in what follows we call the first class simply "farmers," and the second class "landlords." (3) The industrial or sterile class; sterile because, in the view of the physiocrats, it adds to the raw materials delivered to it by the productive class only as much value as it consumes in means of subsistence supplied to it by that same class. Quesnay's *Tableau* was intended to portray how the total annual product of a country (concretely, France) circulates among these three classes and facilitates annual reproduction.

The first premise of the *Tableau* was that the farming system and with it large-scale agriculture, in the sense in which this term was understood in Quesnay's time, had been generally introduced, Normandy, Picardy, Ile de France and a few other French provinces serving as prototypes. The farmer therefore appears as the real leader in agriculture, as he represents in the *Tableau* the whole productive (agricultural) class and pays the landlord a rent in money. An invested capital or inventory of ten milliard *livres* is assigned to the farmers as a whole; of this sum, one-fifth, or two milliards, is the working capital which has to be replaced every year—this figure too was estimated on the basis of the best-managed farms in the provinces mentioned above.

Further premises: (1) that for the sake of simplicity constant prices and simple reproduction prevail; (2) that all circulation which takes place solely within one class is excluded, and that only circulation between class and class is taken into account; (3) that all purchases and sales taking place between class and class in the course of the industrial year are combined in a single total sum. Lastly, it must be borne in mind that in Quesnay's time in France, as was more or less the case throughout Europe, the home industry of the peasant families satisfied by far the greater portion of their needs other than food, and is therefore taken for granted here as supplementary to agriculture.

The starting-point of the *Tableau* is the total harvest, the gross product of the annual yield of the soil, which is consequently placed as the first item—or the "total reproduction" of the country, in this case France. The magnitude of value of this gross product is estimated on the basis of the average prices of agricultural products among the trading nations. It comes to five milliard *livres*, a sum which roughly expresses the money value of the gross agricultural production of France based on such statistical estimates as were then possible. This and nothing else is the reason why in his *Tableau* Quesnay "operates with several milliards," to be precise, with five milliards, and not with five *livres tournois*.[1]

The whole gross product, of a value of five milliards, is therefore in the hands of the productive class, that is, in the first place the farmers, who have produced it by advancing an annual working capital of two milliards, which corresponds to an invested capital of ten milliards. The agricultural products—foodstuffs, raw materials, etc. —which are required for the replacement of the working

[1] An old French coin.—*Ed.*

capital, including therefore the maintenance of all persons directly engaged in agriculture, are taken *in natura*[1] from the total harvest and expended for the purpose of new agricultural production. Since, as we have seen, constant prices and simple reproduction on a given scale are assumed, the money value of the portion which is thus taken from the gross product is equal to two milliard *livres*. This portion, therefore, does not enter into general circulation. For, as we have noted, circulation which takes place only *within* a particular class, and not between one class and another, is excluded from the *Tableau*.

After the replacement of the working capital out of the gross product there remains a surplus of three milliards, of which two are in foodstuffs and one in raw materials. The rent which the farmers have to pay to the landlords is however only two-thirds of this sum, equal to two milliards. It will soon be seen why it is only these two milliards which figure under the heading of "net product" or "net income."

But in addition to the "total reproduction" of agriculture amounting in value to five milliards, of which three milliards enter into general circulation, there is also in the hands of the farmers, *before* the movement described in the *Tableau* begins, the whole "*pécule*" [hoard] of the nation, two milliards of cash money. This comes about in the following way.

As the total harvest is the starting-point of the *Tableau*, this starting-point also forms the closing point of an economic year, for example, of the year 1758, from which point a new economic year begins. During the course of this new year, 1759, the portion of the gross product destined to enter into circulation is distributed

[1] In kind.—*Ed.*

among the two other classes through the medium of a number of individual payments, purchases and sales. These movements, separated, following each other in succession, and stretching over a whole year, are, however—as was bound to happen in any case in the *Tableau*—combined into a few characteristic transactions each of which embraces a whole year's operations at once. This, then, is how at the close of the year 1758 there has flowed back to the farmer class the money paid by it to the landlords as rent for the year 1757 (the *Tableau* itself will show how this comes about), amounting to two milliards; so that the farmer class can again throw this sum into circulation in 1759. Since, however, that sum, as Quesnay observes, is much larger than is required in reality for the total circulation of the country (France), inasmuch as there is a constant succession of separate payments, the two milliard *livres* in the hands of the farmers represent the total money in circulation in the nation.

The class of landlords drawing rent first appears, as is the case even today, in the role of receivers of payments. On Quesnay's assumption the landlords proper receive only four-sevenths of the two milliards of rent: two-sevenths go to the government, and one-seventh to the receivers of tithes. In Quesnay's day the Church was the biggest landlord in France and in addition received the tithes on all other landed property.

The working capital (*avances annuelles*) advanced by the "sterile" class in the course of a whole year consists of raw materials to the value of one milliard—only raw materials, because tools, machinery, etc., are included among the products of that class itself. The many different roles, however, played by such products in the industrial enterprises of this class do not concern the *Tableau* any more than the circulation of commodities and money which takes place exclusively within that

class. The wages for the labour by which the sterile class transforms the raw materials into manufactured goods is equal to the value of the means of subsistence which it receives in part directly from the productive class, and in part indirectly, through the landlords. Although it is itself divided into capitalists and wage-workers, it forms, according to Quesnay's basic conception, an integral class which is in the pay of the productive class and of the landlords. The total industrial production, and consequently also its total circulation, which is distributed over the year following the harvest, is likewise combined into a single whole. It is therefore assumed that at the beginning of the movement set out in the *Tableau* the annual commodity production of the sterile class is entirely in its hands, and consequently that its whole working capital, consisting of raw materials to the value of one milliard, has been converted into goods to the value of two milliards, one-half of which represents the price of the means of subsistence consumed during this transformation. An objection might be raised here: Surely the sterile class also uses up industrial products for its own domestic needs; where are these shown, if its own total product passes through circulation to the other classes? This is the answer we are given: the sterile class not only itself consumes a portion of its own commodities, but in addition it strives to retain as much of the rest as possible. It therefore sells the commodities thrown by it into circulation above their real value, and must do this, as we have evaluated these commodities at the total value of their production. This, however, does not affect the figures of the *Tableau*, for the two other classes receive manufactured goods only to the value of their total production.

So now we know the economic position of the three different classes at the beginning of the movement set out in the *Tableau*.

The productive class, after its working capital has been replaced in kind, still has three milliards of the gross product of agriculture and two milliards in money. The landlord class appears only now with its rent claim of two milliards on the productive class. The sterile class has two milliards in manufactured goods. Circulation passing between only two of these three classes is called imperfect by the physiocrats; circulation which takes place between all three classes is called perfect.

Now for the economic *Tableau* itself.

First (imperfect) *Circulation*: The farmers pay the landlords the rent due to them with two milliards of money, without receiving anything in return. With one of these two milliards the landlords buy means of subsistence from the farmers, to whom one half of the money expended by them in the payment of rent thus returns.

In his *Analyse du Tableau Economique* Quesnay does not make further mention of the state, which receives two-sevenths, or of the Church, which receives one-seventh, of the ground-rent, as their social roles are generally known. In regard to the landlord class proper, however, he says that its expenditure (in which that of all its retainers is included) is, at least as regards the great bulk of it, unfruitful expenditure, with the exception of that small portion which is used "for the maintenance and improvement of their lands and the raising of their standard of cultivation." But by "natural law" their proper function consists precisely in "provision for the good management and expenditure for the maintenance of their patrimony in good repair," or, as is explained further on, in making the *avances foncières*, that is, outlays for the preparation of the soil and provision of all equipment needed by the farms, which enable the farmer to devote his whole capital exclusively to the business of actual cultivation.

Second (perfect) *Circulation*: With the second milliard of money still remaining in their hands, the landlords purchase manufactured goods from the sterile class, and the latter, with the money thus obtained, purchases from the farmers means of subsistence for the same sum.

Third (imperfect) *Circulation:* The farmers buy from the sterile class, with one milliard of money, a corresponding amount of manufactured goods; a large part of these goods consists of agricultural implements and other means of production required in agriculture. The sterile class returns the same amount of money to the farmers, buying raw materials with it to the value of one milliard to replace its own working capital. Thus the two milliards expended by the farmers in payment of rent have flowed back to them, and the movement is closed. And therewith also the great riddle is solved: "What becomes of the net product, which has been appropriated as rent, in the course of the economic circulation?"

We saw above that at the starting-point of the process there was a surplus of three milliards in the hands of the productive class. Of these, only two were paid as net product in the form of rent to the landlords. The third milliard of the surplus constitutes the interest on the total invested capital of the farmers, that is, ten per cent on ten milliards. They do not receive this interest—this should be carefully noted—from circulation; it exists *in natura* in their hands, and they realize it only in circulation, by thus converting it into manufactured goods of equal value.

If it were not for this interest, the farmer—the chief agent in agriculture—would not advance the capital for investment in it. Already from this standpoint, according to the physiocrats, the appropriation by the farmer of that portion of the agricultural *surplus proceeds* which represents interest is as necessary a condition of repro-

duction as the farmer class itself; and hence this element cannot be put in the category of the national "net product" or "net income"; for the latter is characterized precisely by the fact that it is consumable without any regard to the immediate needs of national reproduction. This fund of one milliard, however, serves, according to Quesnay, for the most part to cover the repairs which become necessary in the course of the year, and the partial renewals of invested capital; further, as a reserve fund against accidents, and lastly, where possible, for the enlargement of the invested and working capital, as well as for the improvement of the soil and extension of cultivation.

The whole process is certainly "fairly simple." There enter into circulation: from the farmers, two milliards in money for the payment of rent, and three milliards in products, of which two-thirds are means of subsistence and one-third raw materials; from the sterile class, two milliards in manufactured goods. Of the means of subsistence amounting to two milliards, one half is consumed by the landlords and their retainers, the other half by the sterile class in payment for its labour. The raw materials to the value of one milliard replace the working capital of this latter class. Of the manufactured goods in circulation, amounting to two milliards, one half goes to the landlords and the other to the farmers, for whom it is only a converted form of the interest, which accrues at first hand from agricultural reproduction, on their invested capital. The money thrown into circulation by the farmer in payment of rent flows back to him, however, through the sale of his products, and thus the same process can take place again in the next economic year.

And now we must admire Herr Dühring's "really critical" exposition, which is so infinitely superior to the "traditional superficial reporting." After mysteriously

pointing out to us five times in succession how hazardous it was for Quesnay to operate in the *Tableau* with mere money values—which moreover turned out not to be true—he finally reaches the conclusion that, when he asks: "What becomes of the net product, which has been appropriated as rent, in the course of the national-economic circulation?"—the economic *Tableau* "could offer nothing but confused and arbitrary conceptions, ascending to mysticism." We have seen that the *Tableau*—this both simple and, for its time, brilliant depiction of the annual process of reproduction through the medium of circulation—gives a very exact answer to the question of what becomes of this net product in the course of national-economic circulation. Thus once again the "mysticism" and the "confused and arbitrary conceptions" are left simply and solely with Herr Dühring, as "the most dubious aspect" and the sole "net product" of his study of physiocracy.

Herr Dühring is just as familiar with the historical influence of the physiocrats as with their theories. "With Turgot," he teaches us, "physiocracy in France came to an end both in practice and in theory." That Mirabeau, however, was essentially a physiocrat in his economic views; that he was the leading economic authority in the Constituent Assembly of 1789; that this Assembly in its economic reforms translated from theory into practice a substantial portion of the physiocrats' principles, and in particular laid a heavy tax also on ground-rent, the net product appropriated by the landowners "without consideration"—all this does not exist for "a" Dühring.

Just as the long stroke drawn through the years 1691 to 1752 removed all of Hume's predecessors, so another stroke obliterated Sir James Steuart, who came between Hume and Adam Smith. There is not a syllable in Herr Dühring's "enterprise" on Steuart's great work, which,

apart from its historical importance, permanently enriched the domain of political economy. But, instead, Herr Dühring applies to him the most abusive epithet in his vocabulary, and says that he was "a *professor*" in Adam Smith's time. Unfortunately this insinuation is a pure invention. Steuart, as a matter of fact, was a large landowner in Scotland, who was banished from Great Britain for alleged complicity in the Steuart plot and through long residence and his journeys on the Continent made himself familiar with economic conditions in various countries.

In a word: according to the *Critical History* the only value all earlier economists had was to serve either as "rudiments" of Herr Dühring's "authoritative" and deeper foundations, or, because of their unsound doctrines, as a foil to the latter. In political economy, however, there are also some heroes who represent not only "rudiments" of the "deeper foundation," but "principles" from which this foundation, as was prescribed in Herr Dühring's natural philosophy, is not "developed" but actually "composed": for example, the "incomparably great and eminent" *List*, who, for the benefit of German manufacturers, puffed up the "more subtle" mercantilistic teachings of a Ferrier and others into "mightier" words; also *Carey* who reveals the true essence of his wisdom in the following sentence: "Ricardo's system is one of discords ... its whole tends to the production of hostility among classes... his book is the true manual of the demagogue, who seeks power by means of agrarianism, war, and plunder"; and, at long last, the London City Confucius,[1] *MacLeod*.

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[1] Instead of Confucius, which appears in the MS of the tenth chapter written by Marx, the German printed edition of *Anti-Dühring* has the homophonous Confusius (confuser).—*Ed.*

People who want to study the history of political economy in the present and immediately foreseeable future will certainly be on much safer ground if they make themselves acquainted with the "watery products," "commonplaces" and "beggars' soup" of the "most current textbook compilations," rather than rely on Herr Dühring's "historical depiction in the grand style."

* * *

What, then, is the final result of our analysis of Dühring's "very own system" of political economy? Nothing, except the fact that with all the great words and the still more mighty promises we are just as much duped as we were in the *Philosophy*. His theory of value, this "touchstone of the worth of economic systems," amounts to this: that by value Herr Dühring understands five totally different and directly contradictory things, and, therefore, to put it at its best, himself does not know what he wants. The "natural laws of all economics," ushered in with such pomp, prove to be merely universally familiar and often not even properly understood platitudes of the worst description. The sole explanation of economic facts which his "very own" system can give us is that they are the result of "force," a term with which the philistine of all nations has for thousands of years consoled himself for everything unpleasant that happens to him, and which leaves us just where we were. Instead however of investigating the origin and effects of this force, Herr Dühring expects us to content ourselves gratefully with the mere *word* "force" as the last final cause and ultimate explanation of all economic phenomena. Compelled further to elucidate capitalist exploitation of labour, he first represents it in a general way as based on taxes and price surcharges, thereby completely appropriating the Proudhon-

ian "deduction" (*prélèvement*), and then proceeding to explain it in detail by means of Marx's theory of surplus-labour, surplus-product and surplus-value. In this way he manages to bring about a happy reconciliation of two totally contradictory modes of outlook, by copying down both without taking his breath. And just as in philosophy he could not find enough hard words for the very Hegel whom he was so constantly exploiting and at the same time emasculating, so in the *Critical History* the most baseless calumniation of Marx only serves to conceal the fact that everything in the *Course* about capital and labour which makes any sense at all is likewise an emasculated plagiarism of Marx. His ignorance, which in the *Course* puts the "large landowner" at the beginning of the history of the civilized peoples, and knows not a word of the common ownership of land in the tribal and village communities, which is the real starting-point of all history—this ignorance, at the present day almost incomprehensible, is well-nigh surpassed by the ignorance which, in the *Critical History*, thinks not little of itself because of "the universal breadth of its historical survey," and of which we have given only a few deterrent examples. In a word: first the colossal "effort" of self-admiration, of charlatan blasts on his own trumpet, of promises each surpassing the other; and then the "result"—exactly nil.

PART III

SOCIALISM

I

HISTORICAL

We saw in the "Introduction"[1] how the French philosophers of the eighteenth century, the forerunners of the Revolution, appealed to reason as the sole judge of all that is. A rational government, rational society, were to be founded; everything that ran counter to eternal reason was to be remorselessly done away with. We saw also that this eternal reason was in reality nothing but the idealized understanding of the eighteenth century citizen, just then evolving into the bourgeois. The French Revolution had realized this rational society and government.

But, the new order of things, rational enough as compared with earlier conditions, turned out to be by no means absolutely rational. The state based upon reason completely collapsed. Rousseau's Contrat Social had found its realization in the Reign of Terror, from which the bourgeoisie, who had lost confidence in their own political capacity, had taken refuge first in the corruption of the Directorate, and, finally, under the wing of the Napoleonic despotism. The promised eternal peace was turned into an endless war of conquest. The society based upon reason had fared no better. The antagonism between rich and poor, instead of dissolving into general prosperity, has become intensified by the removal of the guild and other privileges, which had to some extent bridged it over, and by the removal of the charitable institutions of the Church. [The "freedom of property" from feudal fetters, now veritably accomplished, turned out to

[1] See Part I, Philosophy. [*Note by Engels.*]

be, for the small capitalists and small proprietors, the freedom to sell their small property, crushed under the overmastering competition of the large capitalists and landlords, to these great lords, and thus, as far as the small capitalists and peasant proprietors were concerned, became "freedom *from* property."] The development of industry upon a capitalistic basis made poverty and misery of the working masses conditions of existence of society. [Cash payment became more and more, in Carlyle's phrase, the sole nexus between man and man.] The number of crimes increased from year to year. Formerly, the feudal vices had openly stalked about in broad daylight; though not eradicated, they were now at any rate thrust into the background. In their stead, the bourgeois vices, hitherto practised in secret, began to blossom all the more luxuriantly. Trade became to a greater and greater extent cheating. The "fraternity" of the revolutionary motto was realized in the chicanery and rivalries of the battle of competition. Oppression by force was replaced by corruption; the sword, as the first social lever, by gold. The right of the first night was transferred from the feudal lords to the bourgeois manufacturers. Prostitution increased to an extent never heard of. Marriage itself remained, as before, the legally recognized form, the official cloak of prostitution, and, moreover, was supplemented by rich crops of adultery.

In a word, compared with the splendid promises of the philosophers, the social and political institutions born of the "triumph of reason" were bitterly disappointing caricatures. All that was wanting was the men to formulate this disappointment, and they came with the turn of the century. In 1802 Saint-Simon's Geneva letters appeared; in 1808 appeared Fourier's first work, although the groundwork of his theory dated from 1799; on January 1, 1800, Robert Owen undertook the direction of New Lanark.

At this time, however, the capitalist mode of production, and with it the antagonism between the bourgeoisie and the proletariat, was still very incompletely developed. Modern Industry, which had just arisen in England, was still unknown in France. But Modern Industry develops, on the one hand, the conflicts which make absolutely necessary a revolution in the mode of production, [and the doing away with its capitalistic character—] conflicts not only between the classes begotten of it, but also between the very productive forces and the forms of exchange created by it. And, on the other hand, it develops, in these very gigantic productive forces, the means of ending these conflicts. If, therefore, about the year 1800, the conflicts arising from the new social order were only just beginning to take shape, this holds still more fully as to the means of ending them. The "have-nothing" masses of Paris, during the Reign of Terror, were able for a moment to gain the mastery, [and thus to lead the bourgeois revolution to victory *in spite of* the bourgeoisie themselves]. But, in doing so, they only proved how impossible [it] was [for] their domination [to last] under the conditions then obtaining. The proletariat, which then for the first time evolved itself from these "have-nothing" masses as the nucleus of a new class, as yet quite incapable of independent political action, appeared as an oppressed, suffering order, to whom, in its incapacity to help itself, help could, at best, be brought in from without or down from above.

This historical situation also dominated the founders of socialism. To the crude conditions of capitalistic production and the crude class conditions corresponded crude theories. The solution of the social problems, which as yet lay hidden in undeveloped economic conditions, the utopians attempted to evolve out of the human brain. Society presented nothing but wrongs; to remove these

was the task of reason. It was necessary, then, to discover a new and more perfect system of social order and to impose this upon society from without by propaganda, and, wherever it was possible, by the example of model experiments. These new social systems were foredoomed as utopian; the more completely they were worked out in detail, the more they could not avoid drifting off into pure fantasies.

These facts once established, we need not dwell a moment longer upon this side of the question, now wholly belonging to the past. We can leave it to the literary small fry à la Dühring to solemnly quibble over these fantasies, which today only make us smile, and to crow over the superiority of their own bald reasoning, as compared with such "insanity." For ourselves, we delight in the stupendously grand thoughts and germs of thought that everywhere break out through their fantastic covering, and to which these philistines are blind.

[Saint-Simon was a son of the great French Revolution, at the outbreak of which he was not yet thirty. The Revolution was the victory of the third estate, i.e., of the great masses of the nation, *working* in production and in trade, over the privileged *idle* classes, the nobles and the priests. But the victory of the third estate soon revealed itself as exclusively the victory of a small part of this "estate," as the conquest of political power by the socially privileged section of it, i.e., the propertied bourgeoisie. And the bourgeoisie had certainly developed rapidly during the Revolution, partly by speculation in the lands of the nobility and of the Church, confiscated and afterwards *put up for sale*, and partly by frauds upon the nation by means of army contracts. It was the domination of these swindlers that, under the Directorate, brought France and the revolution to the verge of ruin, and thus gave Napoleon the pretext for his *coup d'état*.

Hence, to Saint-Simon the antagonism between the third estate and the privileged classes took the form of an antagonism between "workers" and "idlers." The idlers were not merely the old privileged classes, but also all who, without taking any part in production or distribution, lived on their incomes. And the workers were not only the wage-workers, but also the manufacturers, the merchants, the bankers. That the idlers had lost the capacity for intellectual leadership and political supremacy had been proved, and was by the Revolution finally settled. That the non-possessing classes had not this capacity seemed to Saint-Simon proved by the experiences of the Reign of Terror. Then, who was to lead and command? According to Saint-Simon, science and industry, both united by a new religious bond, destined to restore that unity of religious ideas which had been lost since the time of the Reformation—a necessarily mystic and rigidly hierarchic "new Christianity." But science, that was the scholars; and industry, that was, in the first place, the working bourgeois, manufacturers, merchants, bankers. These bourgeois were, certainly, intended by Saint-Simon to transform themselves into a kind of public officials, of social trustees; but they were still to hold, *vis-à-vis* of the workers, a commanding and economically privileged position. The bankers especially were to be called upon to direct the whole of social production by the regulation of credit. This conception was in exact keeping with a time in which Modern Industry in France and, with it, the chasm between bourgeoisie and proletariat was only just coming into existence. But what Saint-Simon especially lays stress upon is this: what interests him first, and above all other things, is the lot of the class that is the most numerous and the most poor (*"la classe la plus nombreuse et la plus pauvre"*).]

Already in his Geneva letters, Saint-Simon lays down the proposition that "all men ought to work." In the same work he recognizes also that the Reign of Terror was the reign of the non-possessing masses. "See," says he to them, "what happened in France at the time when your comrades held sway there; they brought about a famine." But to recognize the French Revolution as a class war [,and not simply one between nobility and bourgeoisie, but] between nobility, bourgeoisie, and the non-possessors, was, in the year 1802, a most pregnant discovery. In 1816, he declares that politics is the science of production, and foretells the complete absorption of politics by economics. The knowledge that economic conditions are the basis of political institutions appears here only in embryo. Yet what is here already very plainly expressed is the idea of the future conversion of political rule over men into an administration of things and a direction of processes of production—that is to say, the "abolition of the state," about which recently there has been so much noise.

Saint-Simon shows the same superiority over his contemporaries, when in 1814, immediately after the entry of the allies into Paris, and again in 1815, during the Hundred Days' War, he proclaims the alliance of France with England, and then of both these countries with Germany, as the only guarantee for the prosperous development and peace of Europe. To preach to the French in 1815 an alliance with the victors of Waterloo at any rate required somewhat more courage than to declare a war of tittle-tattle on German professors.[1]

[1] Obviously an allusion to Dühring's conflict with certain Berlin University professors.—In *Socialism: Utopian and Scientific* this passage reads as follows: "To preach to the French in 1815 an alliance with the victors of Waterloo required as much courage as historical foresight."—*Ed.*

If in Saint-Simon we find a comprehensive breadth of view, by virtue of which almost all the ideas of later Socialists that are not strictly economic are found in him in embryo, we find in Fourier a criticism of the existing conditions of society, genuinely French and witty, but not upon that account any the less thorough. Fourier takes the bourgeoisie, their inspired prophets before the Revolution, and their interested eulogists after it, at their own word. He lays bare remorselessly the material and moral misery of the bourgeois world. He confronts it with the [earlier] philosophers' dazzling promises of a society in which reason alone should reign, of a civilization in which happiness should be universal, of an illimitable human perfectibility, and with the rose-coloured phraseology of the bourgeois ideologists of his time. He points out how everywhere the most pitiful reality corresponds with the most high-sounding phrases, and he overwhelms this hopeless fiasco of phrases with his mordant sarcasm.

Fourier is not only a critic; his imperturbably serene nature makes him a satirist, and assuredly one of the greatest satirists of all time. He depicts, with equal power and charm, the swindling speculations that blossomed out upon the downfall of the Revolution, and the shopkeeping spirit prevalent in, and characteristic of, French commerce at that time. Still more masterly is his criticism of the bourgeois form of the relations between the sexes, and the position of woman in bourgeois society. He was the first to declare that in any given society the degree of woman's emancipation is the natural measure of the general emancipation.

But Fourier is at his greatest in his conception of the history of society. He divides its whole course, thus far, into four stages of evolution—savagery, barbarism, the patriarchate, civilization. This last is identical with the

so-called bourgeois society of today[1] [—i.e., with the social order that came in with the sixteenth century]. He proves "that the civilized stage raises every vice practised by barbarism in a simple fashion into a form of existence, complex, ambiguous, equivocal, hypocritical"—that civilization moves in "a vicious circle," in contradictions which it constantly reproduces without being able to solve them; hence it constantly arrives at the very opposite to that which it wants to attain, or pretends to want to attain, so that, e.g., "under civilization *poverty is born of superabundance itself.*"

Fourier, as we see, uses the dialectic method in the same masterly way as his contemporary, Hegel. Using these same dialectics, he argues against the talk about illimitable human perfectibility, that every historical phase has its period of ascent and also its period of descent, and he applies this observation to the future of the whole human race. As Kant introduced into natural science the idea of the ultimate destruction of the earth, Fourier introduced into historical science that of the ultimate destruction of the human race.

Whilst in France the hurricane of the Revolution swept over the land, in England a quieter, but not on that account less tremendous, revolution was going on. Steam and the new tool-making machinery were transforming manufacture into modern industry, and thus revolutionizing the whole foundation of bourgeois society. The sluggish march of development of the manufacturing period changed into a veritable storm and stress period of production. With constantly increasing swiftness the splitting-up of society into large capitalists and non-possessing proletarians went on. Between these, instead of the former stable mid-

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[1] *Socialism: Utopian and Scientific* reads: "with the so-called civil, or bourgeois, society of today."—*Ed.*

dle class, an unstable mass of artisans and small shopkeepers, the most fluctuating portion of the population, now led a precarious existence.

The new mode of production was, as yet, only at the beginning of its period of ascent; as yet it was the normal, [regular] method of production—the only one possible under existing conditions. Nevertheless, even then it was producing crying social abuses—the herding together of a homeless population in the worst quarters of the large towns; the loosening of all traditional moral bonds, of patriarchal subordination, of family relations; overwork, especially of women and children, to a frightful extent; complete demoralization of the working class, suddenly flung into altogether new conditions [, from the country into the town, from agriculture into modern industry, from stable conditions of existence into insecure ones that change from day to day].

At this juncture there came forward as a reformer a manufacturer 29 years old—a man of almost sublime, child-like simplicity of character, and at the same time one of the few born leaders of men. Robert Owen had adopted the teaching of the materialistic philosophers: that man's character is the product, on the one hand, of heredity; on the other, of the environment of the individual during his lifetime, and especially during his period of development. In the industrial revolution most of his class saw only chaos and confusion, and the opportunity of fishing in these troubled waters and making large fortunes quickly. He saw in it the opportunity of putting into practice his favourite theory, and so of bringing order out of chaos. He had already tried it with success, as superintendent of more than five hundred men in a Manchester factory. From 1800 to 1829, he directed the great cotton-mill at New Lanark, in Scotland, as managing partner, along the same lines, but with greater freedom of

action and with a success that made him a European reputation. A population, originally consisting of the most diverse and, for the most part, very demoralized elements, a population that gradually grew to 2,500, he turned into a model colony, in which drunkenness, police, magistrates, lawsuits, poor laws, charity, were unknown. And all this simply by placing the people in conditions worthy of human beings, and especially by carefully bringing up the rising generation. He was the founder of infant schools, and introduced them first at New Lanark. At the age of two the children came to school, where they enjoyed themselves so much that they could scarcely be got home again. Whilst his competitors worked their people thirteen or fourteen hours a day, in New Lanark the working-day was only ten and a half hours. When a crisis in cotton stopped work for four months, his workers received their full wages all the time. And with all this the business more than doubled in value, and to the last yielded large profits to its proprietors.

In spite of all this, Owen was not content. The existence which he secured for his workers was, in his eyes, still far from being worthy of human beings. "The people were slaves at my mercy." The relatively favourable conditions in which he had placed them were still far from allowing a rational development of the character and of the intellect in all directions, much less of the free exercise of all their faculties. "And yet, the working part of this population of 2,500 persons was daily producing as much real wealth for society as, less than half a century before, it would have required the working part of a population of 600,000 to create. I asked myself, what became of the difference between the wealth consumed by 2,500 persons and that which would have been consumed by 600,000?" The answer was clear. It had been used to pay the proprietors of the establishment 5 per cent on the capital they

had laid out, in addition to over £300,000 clear profit. And that which held for New Lanark held to a still greater extent for all the factories in England. "If this new wealth had not been created by machinery, imperfectly as it has been applied, the wars of Europe, in opposition to Napoleon, and to support the aristocratic principles of society, could not have been maintained. And yet this new power was the creation of the working class."[1] To them, therefore, the fruits of this new power belonged. The newly-created gigantic productive forces, hitherto used only to enrich individuals and to enslave the masses, offered to Owen the foundations for a reconstruction of society; they were destined, as the common property of all, to be worked for the common good of all.

Owen's communism was based upon this purely business foundation, the outcome, so to say, of commercial calculation. Throughout, it maintained this practical character. Thus, in 1823, Owen proposed the relief of the distress in Ireland by communist colonies, and drew up complete estimates of costs of founding them, yearly expenditure, and probable revenue. And in his definite plan for the future, the technical working out of details is managed with such practical knowledge [—ground-plan, front and side and bird's-eye views all included—] that the Owen method of social reform once accepted, there is from the practical point of view little to be said against the actual arrangement of details.

His advance in the direction of communism was the turning-point in Owen's life. As long as he was simply a philanthropist, he was rewarded with nothing but

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[1] From "The Revolution in Mind and Practice," p. 21, a memorial addressed to all the "red Republicans, Communists and Socialists of Europe," and sent to the provisional government of France, 1848, and also "to Queen Victoria and her responsible advisers." [*Note by Engels.*]

wealth, applause, honour, and glory. He was the most popular man in Europe. Not only men of his own class, but statesmen and princes listened to him approvingly. But when he came out with his communist theories that was quite another thing. Three great obstacles seemed to him especially to block the path to social reform: private property, religion, the present form of marriage. He knew what confronted him if he attacked these—outlawry, excommunication from official society, the loss of his whole social position. But nothing of this prevented him from attacking them without fear of consequences, and what he had foreseen happened. Banished from official society, with a conspiracy of silence against him in the press, ruined by his unsuccessful communist experiments in America, in which he sacrificed all his fortune, he turned directly to the working class and continued working in their midst for thirty years. Every social movement, every real advance in England on behalf of the workers links itself on to the name of Robert Owen. He forced through in 1819, after five years' fighting, the first law limiting the hours of labour for women and children in factories. He was president of the first congress at which all the Trade Unions of England united in a single great trade association. He introduced as transition measures to the complete communistic organization of society, on the one hand, co-operative societies for retail trade and production. These have since that time, at least, given practical proof that the merchant and the manufacturer are socially quite unnecessary. On the other hand, he introduced labour bazaars for the exchange of the products of labour through the medium of labour-notes, whose unit was a single hour of work; institutions necessarily doomed to failure, but completely anticipating Proudhon's bank of exchange of a much later period, and differing entirely from this in that it did not claim to be the panacea for

all social ills, but only a first step towards a much more radical revolution of society.

These are the men on whom the sovereign Herr Dühring looks down, from the height of his "*final and ultimate truth*," with a contempt of which we have given a few examples in the "Introduction." And in one respect this contempt is not devoid of adequate reason: for its basis is, in essence, a really frightful ignorance of the works of the three utopians. Thus Herr Dühring says of Saint-Simon that "his basic idea was, in essentials, correct, and apart from some one-sided aspects, even today provides the directing impulse towards real creation." But although Herr Dühring does actually seem to have had some of Saint-Simon's works in his hands, our search through the twenty-seven relevant printed pages for Saint-Simon's "basic idea" is just as fruitless as our earlier search for what Quesnay's *Tableau* "meant in Quesnay himself," and in the end we have to allow ourselves to be put off with the phrase "that imagination and philanthropic fervour . . . along with the extravagant fantasy that goes with it, dominated the whole of Saint-Simon's thought complex"! As regards Fourier, all that Herr Dühring knows or takes into account is his fantasies of the future, painted in romantic detail. This of course "is far more important" for establishing Herr Dühring's infinite superiority over Fourier than an examination of how the latter "attempts *occasionally* to criticize actual conditions." Occasionally! In fact, almost every page of his works scintillates with sparkling satire and criticism aimed at the wretchedness of our vaunted civilization. It is like saying that Herr Dühring only "occasionally" declares Herr Dühring to be the greatest thinker of all time. And as for the twelve pages devoted to Robert Owen, Herr Dühring has absolutely no other source for them than the miserable biography of the philistine Sargant,

who also did not know Owen's most important works—on marriage and the communist system. Herr Dühring can therefore go the length of boldly asserting that we should not "assume any clear-cut communism" in Owen. Had Herr Dühring ever even fingered Owen's *Book of the New Moral World*, he would most assuredly have found clearly expressed in it not only the most clear-cut communism possible, with equal obligation to labour and equal rights in the product—equal according to age, as Owen always adds—but also the most comprehensive building project of the future communist community, with its ground-plan, front and side and bird's-eye views. But if one limits one's "first-hand study of the writings of the representatives of socialist idea-complexes" to a knowledge of the title and at most the *motto* of a small number of these works, like Herr Dühring, the only thing left to do is make such a stupid and purely fantastic assertion. Owen did not only preach "clear-cut communism"; for five years (at the end of the thirties and beginning of the forties) he put it into practice in the Harmony Hall Colony in Hampshire, the clear-cut quality of whose communism left nothing to be desired. I myself was acquainted with several former members of this communist model experiment. But Sargant knew absolutely nothing of all this, or of any of Owen's activities between 1836 and 1850, and consequently Herr Dühring's "more profound historical work" is also left in pitch-black ignorance. Herr Dühring calls Owen "in every respect a veritable monster of importunate philanthropy." But when this same Herr Dühring starts to give us information about the contents of books whose title and motto he hardly knows, we must not on any account say that he is "in every respect a veritable monster of importunate ignorance," for on *our* lips this would certainly be "abuse."

The utopians, we saw, were utopians because they could be nothing else at a time when capitalist production was as yet so little developed. They necessarily had to construct the elements of a new society out of their own heads, because within the old society the elements of the new were not as yet generally apparent; for the basic plan of the new edifice they could only appeal to reason, just because they could not as yet appeal to contemporary history. But when now, almost eighty years after their time, Herr Dühring steps on to the stage and puts forward his claim to an "authoritative" system of a new social order—not evolved out of the historically developed material at his disposal, as its necessary result—oh, no!—but constructed in his sovereign head, in his mind, pregnant with ultimate truths—then he, who scents epigones everywhere, is himself nothing but the epigone of the utopians, the latest utopian. He calls the great utopians "social alchemists." That may be so. Alchemy was necessary in its epoch. But since that time modern industry has developed the contradictions lying dormant in the capitalist mode of production into such crying antagonisms that the approaching collapse of this mode of production is, so to speak, palpable; that the new productive forces themselves can only be maintained and further developed by the introduction of a new mode of production corresponding to their present stage of development; that the struggle between the two classes engendered by the hitherto existing mode of production and constantly reproduced in ever sharper antagonism has affected all civilized countries and is daily becoming more violent; and that these historical interconnections, the conditions of the social transformation which they make necessary, and the basic features of this transformation likewise determined by them have also already been apprehended. And if Herr Dühring now manufactures a new

utopian social order out of his sovereign brain instead of from the economic material available, he is not practising mere "social alchemy." He is acting rather like a person who, after the discovery and establishment of the laws of modern chemistry, attempts to restore the old alchemy and to use atomic weights, molecular formulas, the quantivalence of atoms, crystallography and spectral analysis for the sole purpose of discovering—the *philosopher's stone.*

II

THEORETICAL

The materialist conception of history starts from the proposition that the production [of the means to support human life] and, next to production, the exchange of things produced, is the basis of all social structure; that in every society that has appeared in history, the manner in which wealth is distributed and society divided into classes or orders is dependent upon what is produced, how it is produced, and how the products are exchanged. From this point of view the final causes of all social changes and political revolutions are to be sought, not in men's brains, not in man's better insight into eternal truth and justice, but in changes in the modes of production and exchange. They are to be sought, not in the *philosophy,* but in the *economics* of each particular epoch. The growing perception that existing social institutions are unreasonable and unjust, that reason has become unreason, and right wrong,[1] is only proof that in the modes of production and exchange changes have silently taken place with which the social order, adapted to earlier economic conditions, is no longer in keeping. From this it also follows that the means of getting rid of the incongruities that have been brought to light must also be present, in a more or less developed condition, within the changed modes of production themselves. These means are not to

[1] Mephistopheles in Goethe's *Faust.—Ed.*

be *invented,* spun out of the head, but *discovered* with the aid of the head in the existing material facts of production.[1]

What is, then, the position of modern socialism in this connection?

The present structure of society—this is now pretty generally conceded—is the creation of the ruling class of today, of the bourgeoisie. The mode of production peculiar to the bourgeoisie, known, since Marx, as the capitalist mode of production, was incompatible with the local privileges and the privileges of estate as well as with the reciprocal personal ties of the feudal system.[2] The bourgeoisie broke up the feudal system and built upon its ruins the capitalist order of society, the kingdom of free competition, of personal liberty, of the equality, before the law, of all commodity owners, of all the rest of the capitalist blessings. Thenceforward the capitalist mode of production could develop in freedom. Since steam, machinery, and the making of machines by machinery transformed the older manufacture into modern industry, the productive forces evolved under the guidance of the bourgeoisie developed with a rapidity and in a degree unheard of before. But just as the older manufacture, in its time, and handicraft, becoming more developed under its influence, had come into collision with the feudal

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[1] In *Socialism: Utopian and Scientific* this passage reads as follows: "these means are not to be invented by deduction from fundamental principles, but are to be discovered in the stubborn facts of the existing system of production."—*Ed.*

[2] In *Socialism: Utopian and Scientific* this passage reads as follows: "The mode of production peculiar to the bourgeoisie, known, since Marx, as the capitalist mode of production, was incompatible with the feudal system, with the privileges it conferred upon individuals, entire social ranks and local corporations, as well as with the hereditary ties of subordination which constituted the framework of its social organization."—*Ed.*

trammels of the guilds, so now modern industry, in its more complete development, comes into collision with the bounds within which the capitalistic mode of production holds it confined. The new productive forces have already outgrown the capitalistic mode of using them. And this conflict between productive forces and modes of production is not a conflict engendered in the mind of man, like that between original sin and divine justice. It exists, in fact, objectively, outside us, independently of the will and actions even of the men that have brought it on. Modern socialism is nothing but the reflex, in thought, of this conflict in fact; its ideal reflection in the minds, first, of the class directly suffering under it, the working class.

Now, in what does this conflict consist?

Before capitalistic production, i.e., in the Middle Ages, the system of petty industry obtained generally, based upon the private property of the labourers in their means of production; [in the country,] the agriculture of the small peasant, freeman or serf; in the towns, the handicrafts [organized in guilds]. The instruments of labour—land, agricultural implements, the workshop, the tool—were the instruments of labour of single individuals, adapted for the use of one worker, and, therefore, of necessity, small, dwarfish, circumscribed. But, for this very reason they belonged, as a rule, to the producer himself. To concentrate these scattered, limited means of production, to enlarge them, to turn them into the powerful levers of production of the present day—this was precisely the historic role of capitalist production and of its upholder, the bourgeoisie. In the fourth section of *Capital* Marx has explained in detail, how since the fifteenth century this has been historically worked out through the three phases of simple co-operation, manufacture and modern industry. But the bourgeoisie, as is also shown there, could not transform these puny means of production into mighty

productive forces without transforming them, at the same time, from means of production of the individual into *social* means of production only workable by *a collectivity of men*. The spinning-wheel, the hand-loom, the blacksmith's hammer, were replaced by the spinning-machine, the power-loom, the steam-hammer; the individual workshop, by the factory implying the co-operation of hundreds and thousands of workmen. In like manner, production itself changed from a series of individual into a series of social acts, and the products from individual to social products. The yarn, the cloth, the metal articles that now came out of the factory were the joint product of many workers, through whose hands they had successively to pass before they were ready. No one person could say of them: "I made that; this is *my* product."

But where, in a given society, the fundamental form of production is that spontaneous division of labour [which creeps in gradually and not upon any preconceived plan], there the products take on the form of commodities, whose mutual exchange, buying and selling, enable the individual producers to satisfy their manifold wants. And this was the case in the Middle Ages. The peasant, e.g., sold to the artisan agricultural products and bought from him the products of handicraft. Into this society of individual producers, of commodity producers, the new mode of production thrust itself. In the midst of the old division of labour, grown up spontaneously and upon *no definite plan*, which had governed the whole of society, now arose division of labour upon *a definite plan*, as organized in the factory; side by side with *individual production* appeared *social* production. The products of both were sold in the same market, and, therefore, at prices at least approximately equal. But organization upon a definite plan was stronger than spontaneous division of labour. The factories working with the combined social forces

of a collectivity of individuals produced their commodities far more cheaply than the individual small producers. Individual production succumbed in one department after another. Socialized production revolutionized all the old methods of production. But its revolutionary character was, at the same time, so little recognized that it was, on the contrary, introduced as a means of increasing and developing the production of commodities. When it arose, it found ready-made and made liberal use of, certain machinery for the production and exchange of commodities: merchants' capital, handicraft, wage-labour. Socialized production thus introducing itself as a new form of the production of commodities, it was a matter of course that under it the old forms of appropriation remained in full swing, and were applied to its products as well.

In the mediaeval stage of evolution of the production of commodities, the question as to the owner of the product of labour could not arise. The individual producer, as a rule, had, from raw material belonging to himself, and generally his own handiwork, produced it with his own tools, by the labour of his own hands or of his family. There was no need for him to appropriate the new product. It belonged wholly to him, as a matter of course. His property in the product was, therefore, based *upon his own labour*. Even where external help was used, this was, as a rule, of little importance, and in many cases received other compensation in addition to wages. The apprentices and journeymen of the guilds worked less for board and wages than for education, in order that they might become master craftsmen themselves.

Then came the concentration of the means of production [and of the producers] in large workshops and manufactories, their transformation into actual socialized means of production [and socialized producers]. But the [socialized producers and] means of production and their

products were still treated, after this change, just as they had been before, i.e., as the means of production and the products of individuals. Hitherto, the owner of the instruments of labour had himself appropriated the product, because, as a rule, it was his own product and the assistance of others was the exception. Now the owner of the instruments of labour always appropriated to himself the product, although it was no longer *his* product but exclusively the product of the *labour of others*. Thus, the products now produced socially were not appropriated by those who had actually set in motion the means of production and actually produced the commodities, but by the *capitalists*. The means of production, and production itself, had become in essence socialized. But they were subjected to a form of appropriation which presupposes the private production of individuals, under which, therefore, every one owns his own product and brings it to market. The mode of production is subjected to this form of appropriation, although it abolishes the conditions upon which the latter rests.[1]

This contradiction, which gives to the new mode of production its capitalistic character, *contains the germ of the whole of the social antagonisms of today*. The greater the mastery obtained by the new mode of production over all decisive fields of production and in all

[1] It is hardly necessary in this connection to point out that, even if the *form* of appropriation remains the same, the *character* of the appropriation is just as much revolutionized as production is by the changes described above. It is, of course, a very different matter whether I appropriate to myself my own product or that of another. Note in passing that wage-labour, which contains the whole capitalistic mode of production in embryo, is very ancient; in a sporadic, scattered form it existed for centuries alongside slave-labour. But the embryo could duly develop into the capitalistic mode of production only when the necessary historical preconditions had been furnished. [*Note by Engels.*]

economically decisive countries,[1] the more it reduced individual production to an insignificant residuum, *the more clearly was brought out the incompatibility of socialized production with capitalistic appropriation.*

The first capitalists found, as we have said, [alongside other forms of labour,] wage-labour ready-made for them [on the market]. But it was exceptional, complementary, accessory, transitory wage-labour. The agricultural labourer, though, upon occasion, he hired himself out by the day, had a few acres of his own land on which he could at all events live at a pinch. The guilds were so organized that the journeyman of today became the master of tomorrow. But all this changed, as soon as the means of production became socialized and concentrated in the hands of capitalists. The means of production, as well as the product, of the individual producer became more and more worthless; there was nothing left for him but to turn wage-worker under the capitalist. Wage-labour, aforetime the exception and accessory, now became the rule and basis of all production; aforetime complementary, it now became the sole remaining function of the worker. The wage-worker for a time became a wage-worker for life. The number of these permanent wage-workers was further enormously increased by the breaking-up of the feudal system that occurred at the same time, by the disbanding of the retainers of the feudal lords, the eviction of the peasants from their homesteads, etc. The separation was made complete between the means of production concentrated in the hands of the capitalists, on the one side, and the producers, possessing nothing but their labour-power, on the other. *The contradiction between socialized production and capitalistic appropriation*

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[1] *Socialism: Utopian and Scientific* reads: "in all manufacturing countries."—*Ed.*

manifested itself as the antagonism of proletariat and bourgeoisie.

We have seen that the capitalistic mode of production thrust its way into a society of commodity-producers, of individual producers, whose social bond was the exchange of their products. But every society based upon the production of commodities has this peculiarity: that the producers have lost control over their own social interrelations. Each man produces for himself with such means of production as he may happen to have, and for such exchange as he may require to satisfy his remaining wants. No one knows how much of his particular article is coming on the market, nor how much of it will be wanted. No one knows whether his individual product will meet an actual demand, whether he will be able to make good his costs of production or even to sell his commodity at all. Anarchy reigns in socialized production.

But the production of commodities, like every other form of production, has its peculiar, inherent laws inseparable from it; and these laws work, despite anarchy, in and through anarchy. They reveal themselves in the only persistent form of social interrelations, i.e., in exchange, and here they affect the individual producers as compulsory laws of competition. They are, at first, unknown to these producers themselves, and have to be discovered by them gradually and as the result of experience. They work themselves out, therefore, independently of the producers, and in antagonism to them, as inexorable natural laws of their particular form of production. The product governs the producers.

In mediaeval society, especially in the earlier centuries, production was essentially directed towards satisfying the wants of the individual. It satisfied, in the main, only the wants of the producer and his family. Where relations of personal dependence existed, as in the coun-

try, it also helped to satisfy the wants of the feudal lord. In all this there was, therefore, no exchange; the products, consequently, did not assume the character of commodities. The family of the peasant produced almost everything they wanted: clothes and furniture, as well as means of subsistence. Only when it began to produce more than was sufficient to supply its own wants and the payments in kind to the feudal lord, only then did it also produce commodities. This surplus, thrown into socialized exchange and offered for sale, became commodities.

The artisans of the towns, it is true, had from the first to produce for exchange. But they, also, themselves supplied the greatest part of their own individual wants. They had gardens and plots of land. They turned their cattle out into the communal forest, which, also, yielded them timber and firing. The women spun flax, wool, and so forth. Production for the purpose of exchange, production of commodities, was only in its infancy. Hence, exchange was restricted, the market narrow, the methods of production stable; there was local exclusiveness without, local unity within; the mark in the country; in the town, the guild.

But with the extension of the production of commodities, and especially with the introduction of the capitalist mode of production, the laws of commodity-production, hitherto latent, came into action more openly and with greater force. The old bonds were loosened, the old exclusive limits broken through, the producers were more and more turned into independent, isolated producers of commodities. The anarchy of social production became apparent and grew to greater and greater height.[1] But

[1] In *Socialism: Utopian and Scientific* this passage reads as follows: "It became apparent that the production of society at large was ruled by absence of plan, by accident, by anarchy; and this anarchy grew to greater and greater height."—*Ed.*

the chief means by aid of which the capitalist mode of production intensified this anarchy of socialized production was the exact opposite of anarchy. It was the increasing organization of production, upon a social basis, in every individual productive establishment. By this, the old, peaceful, stable condition of things was ended. Wherever this organization of production was introduced into a branch of industry, it brooked no other method of production by its side. [Where it laid hold of a handicraft, that old handicraft was wiped out.] The field of labour became a battle-ground. The great geographical discoveries, and the colonization following upon them, multiplied markets and quickened the transformation of handicraft into manufacture. The war did not simply break out between the individual producers of particular localities. The local struggles begat in their turn national conflicts, the commercial wars of the seventeenth and the eighteenth centuries.

Finally, modern industry and the opening of the world market made the struggle universal, and at the same time gave it an unheard-of virulence. Advantages in natural or artificial conditions of production now decide the existence or non-existence of individual capitalists, as well as of whole industries and countries. He that falls is remorselessly cast aside. It is the Darwinian struggle of the individual for existence transferred from nature to society with intensified violence. The conditions of existence natural to the animal appear as the final term of human development. The contradiction between socialized production and capitalistic appropriation now presents itself as *an antagonism between the organization of production in the individual workshop and the anarchy of production in society generally.*

The capitalistic mode of production moves in these two forms of the antagonism immanent to it from its very

origin. It is never able to get out of that "vicious circle" which Fourier had already discovered. What Fourier could not, indeed, see in his time is that this circle is gradually narrowing; that the movement becomes more and more a spiral, and must come to an end, like the movement of the planets, by collision with the centre. It is the compelling force of anarchy in the production of society at large that more and more completely turns the great majority of men into proletarians; and it is the masses of the proletariat again who will finally put an end to anarchy in production. It is the compelling force of anarchy in social production that turns the limitless perfectibility of machinery under modern industry into a compulsory law by which every individual industrial capitalist must perfect his machinery more and more, under penalty of ruin.

But the perfecting of machinery is making human labour superfluous. If the introduction and increase of machinery means the displacement of millions of manual by a few machine-workers, improvement in machinery means the displacement of more and more of the machine-workers themselves. It means, in the last instance, the production of a number of available wage-workers in excess of the average needs of capital, the formation of a complete industrial reserve army, as I called it in 1845,[1] available at the times when industry is working at high pressure, to be cast out upon the street when the inevitable crash comes, a constant dead weight upon the limbs of the working class in its struggle for existence with capital, a regulator for the keeping of wages down to the low level that suits the interests of capital. Thus

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[1] *The Condition of the Working Class in England* (Sonnenschein & Co.), p. 84. [*Note by Engels.*] K. Marx and F. Engels, *On Britain,* Moscow 1954, p. 119.—*Ed.*

it comes about, to quote Marx, that machinery becomes the most powerful weapon in the war of capital against the working class; that the instruments of labour constantly tear the means of subsistence out of the hands of the labourer; that the very product of the worker is turned into an instrument for his subjugation. Thus it comes about that the economizing of the instruments of labour becomes at the same time, from the outset, the most reckless waste of labour-power, and robbery committed upon the normal conditions under which labour functions; that machinery, the most powerful instrument for shortening labour-time, becomes the most unfailing means for placing every moment of the labourer's time and that of his family at the disposal of the capitalist for the purpose of expanding the value of his capital. Thus it comes about that the overwork of some becomes the preliminary condition for the idleness of others, and that modern industry, which hunts after new consumers over the whole world, forces the consumption of the masses at home down to a starvation minimum, and in doing thus destroys its own home market. "The law that always equilibrates the relative surplus-population, or industrial reserve army, to the extent and energy of accumulation, this law rivets the labourer to capital more firmly than the wedges of Vulcan did Prometheus to the rock. It establishes an accumulation of misery, corresponding with accumulation of capital. Accumulation of wealth at one pole is, therefore, at the same time accumulation of misery, agony of toil, slavery, ignorance, brutality, mental degradation, at the opposite pole, i.e., on the side of the class that produces *its own product in the form of capital.*" (Marx's "Capital" [Sonnenschein & Co.], p. 671.)[1] And to expect any other division of the products from the capitalistic mode of pro-

[1] See *Capital*, Vol. I, Moscow 1954, p. 645. Italics by Engels.—*Ed.*

duction is the same as expecting the electrodes of a battery not to decompose acidulated water, not to liberate oxygen at the positive, hydrogen at the negative pole, so long as they are connected with the battery.

We have seen that the ever-increasing perfectibility of modern machinery is, by the anarchy of social production, turned into a compulsory law that forces the individual industrial capitalist always to improve his machinery, always to increase its productive force. The bare possibility of extending the field of production is transformed for him into a similar compulsory law. The enormous expansive force of modern industry, compared with which that of gases is mere child's play, appears to us now as a *necessity* for expansion, both qualitative and quantitative, that laughs at all resistance. Such resistance is offered by consumption, by sales, by the markets for the products of modern industry. But the capacity for extension, extensive and intensive, of the markets is primarily governed by quite different laws that work much less energetically. The extension of the markets cannot keep pace with the extension of production. The collision becomes inevitable, and as this cannot produce any real solution so long as it does not break in pieces the capitalist mode of production, the collisions become periodic. Capitalist production has begotten another "vicious circle."

As a matter of fact, since 1825, when the first general crisis broke out, the whole industrial and commercial world, production and exchange among all civilized peoples and their more or less barbaric hangers-on, are thrown out of joint about once every ten years. Commerce is at a standstill, the markets are glutted, products accumulate, as multitudinous as they are unsaleable, hard cash disappears, credit vanishes, factories are closed, the mass of the workers are in want of the means of subsistence, because they have produced too much of the means of sub-

sistence; bankruptcy follows upon bankruptcy, execution upon execution. The stagnation lasts for years; productive forces and products are wasted and destroyed wholesale, until the accumulated mass of commodities finally filter off, more or less depreciated in value, until production and exchange gradually begin to move again. Little by little the pace quickens. It becomes a trot. The industrial trot breaks into a canter, the canter in turn grows into the headlong gallop of a perfect steeplechase of industry, commercial credit, and speculation, which finally, after break-neck leaps, ends where it began—in the ditch of a crisis. And so over and over again. We have now, since the year 1825, gone through this five times, and at the present moment (1877) we are going through it for the sixth time. And the character of these crises is so clearly defined that Fourier hit all of them off when he described the first as *crise pléthorique,* a crisis from plethora.

In these crises, the contradiction between socialized production and capitalist appropriation ends in a violent explosion. The circulation of commodities is, for the time being, stopped. Money, the means of circulation, becomes a hindrance to circulation. All the laws of production and circulation of commodities are turned upside down. The economic collision has reached its apogee. *The mode of production is in rebellion against the mode of exchange, the productive forces are in rebellion against the mode of production which they have outgrown.*

The fact that the socialized organization of production within the factory has developed so far that it has become incompatible with the anarchy of production in society, which exists side by side with and dominates it, is brought home to the capitalists themselves by the violent concentration of capital that occurs during crises, through the ruin of many large, and a still greater number of small, capitalists. The whole mechanism of the cap-

italist mode of production breaks down under the pressure of the productive forces, its own creations. It is no longer able to turn all this mass of means of production into capital. They lie fallow, and for that very reason the industrial reserve army must also lie fallow. Means of production, means of subsistence, available labourers, all the elements of production and of general wealth, are present in abundance. But "abundance becomes the source of distress and want" (Fourier), because it is the very thing that prevents the transformation of the means of production and subsistence into capital. For in capitalistic society the means of production can only function when they have undergone a preliminary transformation into capital, into the means of exploiting human labour-power. The necessity of this transformation into capital of the means of production and subsistence stands like a ghost between these and the workers. It alone prevents the coming together of the material and personal levers of production; it alone forbids the means of production to function, the workers to work and live. On the one hand, therefore, the capitalistic mode of production stands convicted of its own incapacity to further direct these productive forces. On the other, these productive forces themselves, with increasing energy, press forward to the removal of the existing contradiction, to the abolition of their quality as capital, to the *practical recognition of their character as social productive forces.*

This rebellion of the productive forces, as they grow more and more powerful, against their quality as capital, this stronger and stronger command that their social character shall be recognized, forces the capitalist class itself to treat them more and more as social productive forces, so far as this is possible under capitalist conditions. The period of industrial high pressure, with its unbounded inflation of credit, not less than the crash itself, by

the collapse of great capitalist establishments, tends to bring about that form of the socialization of great masses of means of production which we meet with in the different kinds of joint-stock companies. Many of these means of production and of distribution are, from the outset, so colossal that, like the railways, they exclude all other forms of capitalistic exploitation. At a further stage of evolution this form also becomes insufficient. [The producers on a large scale in a particular branch of industry in a particular country unite in a "Trust," a union for the purpose of regulating production. They determine the total amount to be produced, parcel it out among themselves, and thus enforce the selling price fixed beforehand. But trusts of this kind, as soon as business becomes bad, are generally liable to break up, and on this very account compel a yet greater concentration of association. The whole of the particular industry is turned into one gigantic joint-stock company; internal competition gives place to the internal monopoly of this one company. This has happened in 1890 with the English alkali production, which is now, after the fusion of 48 large works, in the hands of one company, conducted upon a single plan, and with a capital of £6,000,000.

In the trusts, freedom of competition changes into its very opposite—into monopoly; and the production without any definite plan of capitalistic society capitulates to the production upon a definite plan of the invading socialistic society. Certainly this is so far still to the benefit and advantage of the capitalists. But in this case the exploitation is so palpable that it must break down. No nation will put up with production conducted by trusts, with so barefaced an exploitation of the community by a small band of dividend-mongers.

In any case, with trusts or without,] the official representative of capitalist society—the state—will ultimate-

ly have to undertake the direction of production.[1] This necessity for conversion into state property is felt first in the great institutions for intercourse and communication —the post office, the telegraphs, the railways.

If the crises demonstrate the incapacity of the bourgeoisie for managing any longer modern productive forces, the transformation of the great establishments for production and distribution into joint-stock companies [,trusts] and state property show how unnecessary the bourgeoisie are for that purpose. All the social functions of the capitalist are now performed by salaried employees. The capitalist has no further social function than that of

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[1] I say *"have to."* For only when the means of production and distribution have *actually* outgrown the form of management by joint-stock companies, and when, therefore, the taking them over by the state has become *economically* inevitable, and then—even if it is the state of today that effects this– is there an economic advance, the attainment of another step preliminary to the taking over all productive forces by society itself. But of late, since Bismarck went in for state-ownership of industrial establishments, a kind of spurious socialism has arisen, degenerating, now and again, into something of flunkeyism, that without more ado declares *all* state ownership, even of the Bismarckian sort, to be socialistic. Certainly, if the taking over by the state of the tobacco industry is socialistic, then Napoleon and Metternich must be numbered among the founders of socialism. If the Belgian state, for quite ordinary political and financial reasons, itself constructed its chief railway lines; if Bismarck, not under any economic compulsion, took over for the state the chief Prussian lines, simply to be the better able to have them in hand in case of war, to bring up the railway employees as voting cattle for the government, and especially to create for himself a new source of income independent of parliamentary votes—this was, in no sense, a socialistic measure, directly or indirectly, consciously or unconsciously. Otherwise, the Royal Maritime Company, the Royal porcelain manufacture, and even the regimental tailor of the army would also be socialistic institutions [,or even, as was seriously proposed by a sly dog in Frederick William III's reign, the taking over by the state of the brothels]. [*Note by Engels.*]

pocketing dividends, tearing off coupons, and gambling on the Stock Exchange, where the different capitalists despoil one another of their capital. At first the capitalist mode of production forces out the workers. Now it forces out the capitalists, and reduces them, just as it reduced the workers, to the ranks of the surplus population, although not immediately into those of the industrial reserve army.

But the transformation, either into joint-stock companies [and trusts], or into state ownership, does not do away with the capitalistic nature of the productive forces. In the joint-stock companies [and trusts] this is obvious. And the modern state, again, is only the organization that bourgeois society takes on in order to support the general external conditions of the capitalist mode of production against the encroachments as well of the workers as of individual capitalists. The modern state, no matter what its form, is essentially a capitalist machine, the state of the capitalists, the ideal personification of the total national capital. The more it proceeds to the taking over the productive forces, the more does it actually become the national capitalist, the more citizens does it exploit. The workers remain wage-workers—proletarians. The capitalist relation is not done away with. It is rather brought to a head. But, brought to a head, it topples over. State ownership of the productive forces is not the solution of the conflict, but concealed within it are the technical conditions that form the elements of that solution.

This solution can only consist in the practical recognition of the social nature of the modern forces of production, and therefore in the harmonizing of the modes of production, appropriation, and exchange with the socialized character of the means of production. And this can only come about by society openly and directly taking possession of the productive forces which have outgrown

all control except that of society as a whole. The social character of the means of production and of the products today reacts against the producers, periodically disrupts all production and exchange, acts only like a law of nature working blindly, forcibly, destructively. But with the taking over by society of the productive forces, the social character of the means of production and of the products will be utilized by the producers with a perfect understanding of its nature, and instead of being a source of disturbance and periodical collapse, will become the most powerful lever of production itself.

Active social forces work exactly like natural forces: blindly, forcibly, destructively, so long as we do not understand, and reckon with, them. But when once we understand them, when once we grasp their action, their direction, their effects, it depends only upon ourselves to subject them more and more to our own will, and by means of them to reach our own ends. And this holds quite especially of the mighty productive forces of today. As long as we obstinately refuse to understand the nature and the character of these productive forces—and this understanding goes against the grain of the capitalist mode of production and its defenders—so long these forces are at work in spite of us, in opposition to us, so long they master us, as we have shown above in detail.

But when once their nature is understood, they can, in the hands of the producers working together, be transformed from master demons into willing servants. The difference is as that between the destructive force of electricity in the lightning of the storm, and electricity under command in the telegraph and the voltaic arc; the difference between a conflagration, and fire working in the service of man. With this recognition, at last, of the real nature of the productive forces of today, the social anarchy of production gives place to a social regulation

of production upon a definite plan, according to the needs of the community and of each individual. Then the capitalist mode of appropriation, in which the product enslaves first the producer and then the appropriator, is replaced by the mode of appropriation of the products that is based upon the nature of the modern means of production; upon the one hand, direct social appropriation, as means to the maintenance and extension of production—on the other, direct individual appropriation, as means of subsistence and of enjoyment.

Whilst the capitalist mode of production more and more completely transforms the great majority of the population into proletarians, it creates the power which, under penalty of its own destruction, is forced to accomplish this revolution. Whilst it forces on more and more the transformation of the vast means of production, already socialized, into state property, it shows itself the way to accomplishing this revolution. *The proletariat seizes political power and turns the means of production in the first instance into state property.*

But, in doing this, it abolishes itself as proletariat, abolishes all class distinctions and class antagonisms, abolishes also the state as state. Society thus far, based upon class antagonisms, had need of the state, that is, of an organization of the particular class, which was *pro tempore* the exploiting class, for the maintenance of its external conditions of production,[1] and, therefore, especially, for the purpose of forcibly keeping the exploited classes in the condition of oppression corresponding with the given mode of production (slavery, serfdom, wage-labour). The state was the official representative of society as a

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[1] In *Socialism: Utopian and Scientific* this phrase reads as follows: "for the purpose of preventing any interference from without with the existing conditions of production."—*Ed.*

whole; the gathering of it together into a visible embodiment. But it was this only in so far as it was the state of that class which itself represented, for the time being, society as a whole: in ancient times, the state of slave-owning citizens; in the Middle Ages, the feudal lords; in our own time, the bourgeoisie. When at last it becomes the real representative of the whole of society, it renders itself unnecessary. As soon as there is no longer any social class to be held in subjection; as soon as class rule, and the individual struggle for existence based upon our present anarchy in production, with the collisions and excesses arising from these, are removed, nothing more remains to be repressed, and a special repressive force, a state, is no longer necessary. The first act by virtue of which the state really constitutes itself the representative of the whole of society—the taking possession of the means of production in the name of society—this is, at the same time, its last independent act as a state. State interference in social relations becomes, in one domain after another, superfluous, and then dies out of itself; the government of persons is replaced by the administration of things, and by the conduct of processes of production. The state is not "abolished." *It dies out.* This gives the measure of the value of the phrase "a free people's state,"[1] both as to its justifiable use at times by agitators, and as to its ultimate scientific insufficiency; and also of the demands of the so-called anarchists for the abolition of the state out of hand.

Since the historical appearance of the capitalist mode of production, the appropriation by society of all the means of production has often been dreamed of, more or

[1] On "a free people's state" see K. Marx and F. Engels, *Selected Works,* Vol. II, Moscow 1951, pp. 29-31; V. I. Lenin, *The State and Revolution,* Moscow 1951, pp. 27-37, 103-08; J. V. Stalin, *Problems of Leninism,* Moscow 1953, pp. 345-48.—*Ed.*

less vaguely, by individuals, as well as by sects, as the ideal of the future. But it could become possible, could become a historical necessity, only when the actual conditions for its realization were there. Like every other social advance, it becomes practicable, not by men understanding that the existence of classes is in contradiction to justice, equality, etc., not by the mere willingness to abolish these classes, but by virtue of certain new economic conditions. The separation of society into an exploiting and an exploited class, a ruling and an oppressed class, was the necessary consequence of the deficient and restricted development of production in former times. So long as the total social labour only yields a produce which but slightly exceeds that barely necessary for the existence of all; so long, therefore, as labour engages all or almost all the time of the great majority of the members of society—so long, of necessity, this society is divided into classes. Side by side with the great majority, exclusively bond slaves to labour, arises a class freed from directly productive labour, which looks after the general affairs of society: the direction of labour, state business, law, science, art, etc. It is, therefore, the law of division of labour that lies at the basis of the division into classes. But this does not prevent this division into classes from being carried out by means of violence and robbery, trickery and fraud. It does not prevent the ruling class, once having the upper hand, from consolidating its power at the expense of the working class, from turning its social leadership into an [intensified] exploitation of the masses.

But if, upon this showing, division into classes has a certain historical justification, it has this only for a given period, only under given social conditions. It was based upon the insufficiency of production. It will be swept away by the complete development of modern productive

forces. And, in fact, the abolition of classes in society presupposes a degree of historical evolution at which the existence, not simply of this or that particular ruling class, but of any ruling class at all, and, therefore, the existence of class distinction itself has become an obsolete anachronism. It presupposes, therefore, the development of production carried out to a degree at which appropriation of the means of production and of the products, and, with this, of political domination, of the monopoly of culture, and of intellectual leadership by a particular class of society, has become not only superfluous but economically, politically, intellectually a hindrance to development.

This point is now reached. Their political and intellectual bankruptcy is scarcely any longer a secret to the bourgeoisie themselves. Their economic bankruptcy recurs regularly every ten years. In every crisis, society is suffocated beneath the weight of its own productive forces and products, which it cannot use, and stands helpless, face to face with the absurd contradiction that the producers have nothing to consume, because consumers are wanting. The expansive force of the means of production bursts the bonds that the capitalist mode of production had imposed upon them. Their deliverance from these bonds is the one precondition for an unbroken, constantly-accelerated development of the productive forces, and therewith for a practically unlimited increase of production itself. Nor is this all. The socialized appropriation of the means of production does away, not only with the present artificial restrictions upon production, but also with the positive waste and devastation of productive forces and products that are at the present time the inevitable concomitants of production, and that reach their height in the crises. Further, it sets free for the community at large a mass of means of production and of products, by doing away with the senseless extravagance of the ruling classes

of today and their political representatives. The possibility of securing for every member of society, by means of socialized production, an existence not only fully sufficient materially, and becoming day by day more full, but an existence guaranteeing to all the free development and exercise of their physical and mental faculties—this possibility is now for the first time here, but *it is here.*[1]

With the seizing of the means of production by society, production of commodities is done away with, and, simultaneously, the mastery of the product over the producer. Anarchy in social production is replaced by plan-conforming, conscious organization. The struggle for individual existence disappears. Then for the first time man, in a certain sense, is finally marked off from the rest of the animal kingdom, and emerges from mere animal conditions of existence into really human ones. The whole sphere of the conditions of life which environ man, and which have hitherto ruled man, now comes under the dominion and control of man, who for the first time becomes the real, conscious lord of nature, because he has now become master of his own social organization. The laws of his own social action, hitherto standing face to face with man as laws of nature foreign to, and dominating him,

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[1] A few figures may serve to give an approximate idea of the enormous expansive force of the modern means of production, even under capitalist pressure. According to Mr. Giffen, the total wealth of Great Britain and Ireland amounted, in round numbers, in

1814 to £2,200,000,000,
1865 to £6,100,000,000,
1875 to £8,500,000,000.

As an instance of the squandering of means of production and of products during a crisis, the total loss in the *German iron industry* alone, in the last crisis, was given at the second German industrial Congress (Berlin, February 21, 1878), as £22,750,000. [*Note by Engels.*]

will then be used with full understanding, and so mastered by him. Man's own social organization, hitherto confronting him as a necessity imposed by nature and history, now becomes the result of his own free action. The extraneous objective forces that have hitherto governed history pass under the control of man himself. Only from that time will man himself, with full consciousness,[1] make his own history—only from that time will the social causes set in movement by him have, in the main and in a constantly growing measure, the results intended by him. It is the ascent of man from the kingdom of necessity to the kingdom of freedom.

[Let us briefly sum up our sketch of historical evolution.

I. *Mediaeval Society*—Individual production on a small scale. Means of production adapted for individual use; hence primitive, ungainly, petty, dwarfed in action. Production for immediate consumption, either of the producer himself or of his feudal lord. Only where an excess of production over this consumption occurs is such excess offered for sale, enters into exchange. Production of commodities, therefore, only in its infancy. But already it contains within itself, in embryo, *anarchy in the production of society at large.*

II. *Capitalist Revolution*—transformation of industry, at first by means of simple co-operation and manufacture. Concentration of the means of production, hitherto scattered, into great workshops. As a consequence, their transformation from individual to social means of production—a transformation which does not, on the whole, affect the form of exchange. The old forms of appropriation remain in force. The *capitalist* appears. In his capacity as owner of the means of production, he also appropriates the prod-

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[1] *Socialism: Utopian and Scientific* reads: "more and more consciously."—*Ed.*

ucts and turns them into commodities. Production has become a social act. Exchange and appropriation continue to be individual acts, the acts of individuals. *The social product is appropriated by the individual capitalist.* Fundamental contradiction, whence arise all the contradictions in which our present-day society moves, and which modern industry brings to light.

A. Severance of the producer from the means of production. Condemnation of the worker to wage-labour for life. *Antagonism between the proletariat and the bourgeoisie.*

B. Growing predominance and increasing effectiveness of the laws governing the production of commodities. Unbridled competition. *Contradiction between socialized organization in the individual factory and social anarchy in production as a whole.*

C. On the one hand, perfecting of machinery, made by competition compulsory for each individual manufacturer, and equivalent to a constantly growing displacement of labourers: *industrial reserve-army.* On the other hand, unlimited extension of production, also compulsory under competition, for every manufacturer. On both sides, unheard-of development of productive forces, excess of supply over demand, over-production, glutting of the markets, crises every ten years, the vicious circle: *excess here, of means of production and products—excess there, of labourers*, without employment and without means of existence. But these two levers of production and of social well-being are unable to work together, because the capitalist form of production prevents the productive forces from working and the products from circulating, unless they are first turned into capital—which their very superabundance prevents. The contradiction has grown into an absurdity: *the mode of production rises in rebellion against the form of exchange.* The bourgeoisie are

convicted of incapacity further to manage their own social productive forces.

D. Partial recognition of the social character of the productive forces forced upon the capitalists themselves. Taking over of the great institutions for production and communication, first by *joint-stock companies*, later on by trusts, then by the *state*. The bourgeoisie demonstrated to be a superfluous class. All its social functions are now performed by salaried employees.

III. *Proletarian Revolution*—Solution of the contradictions. The proletariat seizes the public power, and by means of this transforms the socialized means of production, slipping from the hands of the bourgeoisie, into public property. By this act, the proletariat frees the means of production from the character of capital they have thus far borne, and gives their socialized character complete freedom to work itself out. Socialized production upon a predetermined plan becomes henceforth possible. The development of production makes the existence of different classes of society thenceforth an anachronism. In proportion as anarchy in social production vanishes, the political authority of the state dies out. Man, at last the master of his own form of social organization, becomes at the same time the lord over nature, his own master—free.]

To accomplish this act of universal emancipation is the historical mission of the modern proletariat. To thoroughly comprehend the historical conditions and thus the very nature of this act, to impart to the now oppressed proletarian class a full knowledge of the conditions and of the meaning of the momentous act it is called upon to accomplish—this is the task of the theoretical expression of the proletarian movement, scientific socialism.

III

PRODUCTION

After all that has been said above, the reader will not be surprised to learn that the principal features of socialism described in the preceding part are not at all in accordance with Herr Dühring's view. On the contrary. He must hurl them into the abyss where lie all the other rejected "bastards of historical and logical fantasy," "barren conceptions," "confused and hazy notions," etc. To Herr Dühring, socialism in fact is not at all a necessary product of historical development and still less of the grossly material economic conditions of today, directed toward the filling of the stomach exclusively. He's got it all worked out much better. His socialism is a final and ultimate truth; it is "the natural system of society," whose roots are to be found in a "universal principle of justice"; and if he cannot avoid taking notice of the existing situation, created by the sinful history of the past, in order to remedy it, this must be regarded rather as a misfortune for the pure principle of justice. Herr Dühring creates his socialism, like everything else, through the medium of his famous two men. Instead of these two puppets playing the part of master and servant, as they did in the past, they perform this once, for a change, the piece on the equality of rights—and the foundations of the Dühringian socialism have been laid.

It therefore goes without saying that to Herr Dühring the periodical crises in industry have not at all the histor-

ical significance which we were compelled to attribute to them. In his view, crises are only occasional deviations from "normalcy" and at most only serve to promote "the development of a more regulated order." The "common method" of explaining crises by over-production is in no wise adequate for his "more exact conception of things." Of course such an explanation "may be permissible for specific crises in particular areas." As for example: "a swamping of the book market with works suddenly released for republication and suitable for mass sale." Herr Dühring can at any rate go to sleep with the gratifying feeling that his immortal works will never bring on any such world disaster. He claims, however, that in great crises, it is not over-production, but rather "the lagging behind of popular consumption ... artificially produced under-consumption ... interference with the natural growth of the *needs of the people* (!), which ultimately make the gulf between supply and demand so critically wide." And he has even had the good fortune to find a disciple for this crisis theory of his.

But unfortunately the under-consumption of the masses, the restriction of the consumption of the masses to what is necessary for their maintenance and reproduction, is not a new phenomenon. It has existed as long as there have been exploiting and exploited classes. Even in those periods of history when the situation of the masses was particularly favourable, as for example in England in the fifteenth century, they under-consumed. They were very far from having their own annual total product at their disposal to be consumed by them. Therefore, while under-consumption has been a constant feature in history for thousands of years, the general shrinkage of the market which breaks out in crises as the result of a surplus of production is a phenomenon only of the last fifty years; and so Herr Dühring's whole superficial vulgar

economics is necessary in order to explain the new collision not by the *new* phenomenon of over-production but by the thousand-year old phenomenon of under-consumption. It is like a mathematician attempting to explain the variation in the ratio between two quantities, one constant and one variable, not by the variation of the variable but by the fact that the constant quantity remains unchanged. The under-consumption of the masses is a necessary condition of all forms of society based on exploitation, consequently also of the capitalist form; but it is the capitalist form of production which first gives rise to crises. The under-consumption of the masses is therefore also a prerequisite condition of crises, and plays in them a role which has long been recognized. But it tells us just as little why crises exist today as why they did not exist before.

Herr Dühring's notions of the world market are altogether curious. We saw how, like a typical German man of letters, he seeks to explain real industrial specific crises by means of imaginary crises on the Leipzig book market—the storm on the ocean by the storm in a teacup. He also imagines that present-day capitalist production must "depend for its market mainly on *the circles of the possessing classes* themselves"; which does not prevent him, only sixteen pages later, from presenting, in the generally accepted way, the iron and cotton industries as the modern industries of decisive importance—that is, precisely the two branches of production whose output is consumed only to an infinitesimally small degree within the circle of the possessing classes and is dependent more than any other on mass use. Wherever we turn in Herr Dühring's works there is nothing but empty and contradictory chatter. But let us take an example from the cotton industry. In the relatively small town of Oldham alone—it is one of a dozen towns round

Manchester with fifty to a hundred thousand inhabitants engaged in the cotton industry—in this town alone, in the four years 1872 to 1875, the number of spindles spinning only Number 32 yarn increased from two and a half to five million; so that in one medium-sized English town there are as many spindles spinning one single count as the cotton industry of all Germany, including Alsace, possesses. And the expansion in the other branches and areas of the cotton industry in England and Scotland has taken place in approximately the same proportion. In view of these facts, it requires a strong dose of deep-rooted effrontery to explain the present complete stagnation in the yarn and cloth markets by the under-consumption of the English masses and not by the over-production carried on by the English cotton-mill owners.[1]

But enough. One does not argue with people who are so ignorant of economics as to consider the Leipzig book market a market in the modern industrial sense. Let us therefore merely note that Herr Dühring has only one more piece of information for us on the subject of crises: that in crises we have nothing but "the ordinary interplay of overstrain and relaxation"; that over-speculation "is not only due to the planless multiplication of private enterprises," but that "the rashness of individual entrepreneurs and the lack of private circumspection must also be reckoned among the causes which give rise to over-supply." And what, again, is the "cause which gives rise" to the rashness and lack of private circumspection? Just precisely this very planlessness of capitalist production, which manifests itself in the planless multiplication of

[1] The "under-consumption" explanation of crises originated with Sismondi, and in his exposition it still had a certain meaning. Rodbertus took it from Sismondi, and Herr Dühring has in turn copied it, in his usual vulgarizing fashion, from Rodbertus. [*Note by Engels.*]

private enterprises. And to mistake the translation of an economic fact into moral reprobation as the discovery of a new cause is also a piece of extreme "rashness."

With this we can leave the question of crises. In the preceding section we showed that they were necessarily engendered by the capitalist mode of production, and explained their significance as crises of this mode of production itself, as means of compelling the social revolution, and it is not necessary to say another word in reply to Herr Dühring's superficialities on this subject. Let us pass on to his positive creations, the "natural system of society."

This system, built on a "universal principle of justice" and therefore free from all consideration of troublesome material facts, consists of a federation of economic communes among which there is "freedom of movement and obligatory acceptance of new members on the basis of fixed laws and administrative regulations." The economic commune itself is above all "a comprehensive schematism of great import in human history" which is far superior to the "erroneous half-measures," for example, of a certain Marx. It implies "a community of persons linked together by their public right to dispose of a definite area of land and a group of productive establishments for use in common, jointly participating in the proceeds." This public right is "a right to the object... in the sense of a *purely publicistic relation to nature* and to the productive institutions." We leave it to the future jurists of the economic commune to cudgel their brains as to what this means; we give it up. The only thing we gather is that it is not at all the same as the "corporative ownership of workers' associations" which would not exclude mutual competition and even the exploitation of wage-labour. In this connection he drops the remark that the conception of a "collective ownership," such as is found also

in Marx, is "to say the least unclear and open to question, as this conception of the future always gives the impression that it means nothing more than corporative ownership by groups of workers." This is one more instance of the many "vile mannerisms" of interpolation so customary with Herr Dühring, "for whose vulgar nature"—to use his own words—"only the vulgar word snotty would be quite appropriate"; it is just as baseless a lie as Herr Dühring's other invention that by collective ownership Marx means an "ownership which is at once both individual and social."

In any case this much seems clear: the publicistic right of an economic commune in its instruments of labour is an exclusive right of property at least as against every other economic commune and also as against society and the state. But this right is not to entitle the commune "to cut itself off ... from the outside world, for among the various economic communes there is freedom of movement and obligatory acceptance of new members on the basis of fixed laws and administrative regulations ... like ... belonging to a political organization at the present time, or participation in the economic affairs of the commune." There will therefore be rich and poor communes, and the levelling out takes place through the population crowding into the rich communes and leaving the poor ones. So that although Herr Dühring wants to eliminate competition in products between the individual communes by means of national organization of trade, he calmly allows competition among the producers to continue. Things are removed from the sphere of competition, but men remain subject to it.

But we are still very far from clear on the question of "publicistic right." Two pages further on Herr Dühring explains to us that the trade commune "will at first cover the politico-social area whose inhabitants form a single

legal entity and in this character have at their disposal the whole of the land, the dwellings and productive institutions." So after all it is not the individual commune at whose disposal these things are, but the whole nation. The "public right," "right to the object," "publicistic relation to nature" and so forth is therefore not merely "at least unclear and open to question": it is in direct contradiction with itself. It is in fact, at any rate in so far as each individual economic commune is likewise a legal entity, "an ownership which is at once both individual and social," and this latter "nebulous hybrid" is once again, therefore, only to be met with in Herr Dühring's own works.

In any case the economic commune has at its disposal instruments of labour for the purpose of production. How is this production carried on? Judging by all Herr Dühring has told us, precisely as in the past, except that the commune takes the place of the capitalists. The most we are told is that everyone will then be free to choose his occupation, and that there will be equal obligation to work.

The basic form of all production hitherto has been the division of labour, on the one hand, within society as a whole, and on the other, within each separate productive establishment. How does the Dühring "sociality" stand on this question?

The first great division of labour in society is the separation of town and country. This antagonism, according to Herr Dühring, is, "in the nature of things, inevitable." But "it is in general doubtful to regard the gulf between agriculture and industry ... as unbridgeable. In fact, there already exists, to a certain extent, constancy of interconnection with promises to increase considerably in the future." Already, we learn, two industries have penetrated agriculture and rural production: "in the first

place, distilling, and in the second, beet-sugar manufacturing. . . . The production of spirits is already of such importance that it is more likely to be under-estimated than over-estimated." And "if it were possible, as a result of some inventions, for so large a number of industries to develop that they should be compelled to localize their production in the country and carry it on in direct association with the production of raw materials"—then this would weaken the antithesis between town and country and "provide the widest possible basis for the development of civilization." Moreover, "a somewhat similar result might also be attained in another way. Apart from technical requirements, social needs are coming more and more to the forefront, and if the latter become the dominant consideration in the grouping of human activities it will no longer be possible to overlook those advantages which ensue from a close and systematic connection between the occupations of the countryside and the technical operations of working up raw materials."

Now in the economic commune it is precisely social needs which are coming to the forefront; and so will it really hasten to take advantage, to the fullest possible extent, of the above-mentioned union of agriculture and industry? Will Herr Dühring not fail to tell us, at his accustomed length, his "more exact conceptions" on the attitude of the economic commune to this question? The reader who expected him not to would be cruelly disillusioned. The above-mentioned meagre, hesitant commonplaces, once again not passing beyond the schnaps-distilling and beet-sugar-making sphere of the jurisdiction of the Prussian *Landrecht*, are all that Herr Dühring has to say on the antithesis between town and country in the present and in the future.

Let us pass on to the division of labour in detail. Here Herr Dühring is a little "more exact." He speaks of

"a person who has to devote himself *exclusively* to *one* form of occupation." If the point at issue is the introduction of a new branch of production, the problem simply hinges on whether a certain number of *entities*, who are to *devote themselves to the production of one single article*, can somehow be provided with the consumption (!) they require. In the socialitarian system no branch of production would "*require* many *people*," and there, too, there would be "*economic species*" of men "distinguished by their way of life." Accordingly, within the sphere of production everything remains much the same as before. In society up to now, however, an "erroneous division of labour" has obtained; but as to what this is, and by what it is to be replaced in the economic commune, we are only told: "With regard to the division of labour itself, we have already said above that this question can be considered settled as soon as account is taken of the various natural conditions and personal capabilities." In addition to capabilities, personal likings are taken into account: "The pleasure felt in rising to types of activity which involve additional capabilities and training would depend exclusively on the inclination felt for the occupation in question and on the joy produced in the exercise of *precisely this and no other thing*" (exercise of a thing!). And this will stimulate competition within the socialitarian system, so that "production itself will become interesting, and the dull pursuit of it, which sees in it nothing but a means of earning will no longer put its heavy imprint on conditions."

In every society in which production has developed spontaneously—and our present society is of this type—the situation is not that the producers control the means of production, but that the means of production control the producers. In such a society each new lever of production is necessarily transformed into a new

means for the subjection of the producers to the means of production. This is most of all true of that lever of production which, prior to the introduction of modern industry, was far the most powerful—the division of labour. The first great division of labour, the separation of town and country, condemned the rural population to thousands of years of mental torpidity, and the people of the towns each to subjection to his own individual trade. It destroyed the basis of the intellectual development of the former and the physical development of the latter. When the peasant appropriates his land, and the townsman his trade, his land appropriates the peasant and his trade the townsman to the very same extent. In the division of labour, man is also divided. All other physical and mental faculties are sacrificed to the development of one single activity. This stunting of man grows in the same measure as the division of labour, which attains its highest development in manufacture. Manufacture splits up each trade into its separate partial operations, allots each of these to an individual labourer as his life calling, and thus chains him for life to a particular detail function and a particular tool. "It converts the labourer into a crippled monstrosity, by forcing his detail dexterity at the expense of a world of productive capabilities and instincts.... The individual himself is made the automatic motor of a fractional operation" (Marx)[1]—a motor which in many cases is perfected only by literally crippling the labourer physically and mentally. The machinery of modern industry degrades the labourer from a machine to the mere appendage of a machine. "The lifelong speciality of handling one and the same tool, now becomes the lifelong speciality of serving one and the same machine. Machinery is put to

[1] *Capital*, Vol. I, Moscow 1954, p. 360.—*Ed.*

a wrong use, with the object of transforming the workman, from his very childhood, into a part of a detail-machine" (Marx).[1] And not only the labourers, but also the classes directly or indirectly exploiting the labourers are made subject, through the division of labour, to the tool of their function: the empty-minded bourgeois to his own capital and his own insane craving for profits; the lawyer to his fossilized legal conceptions, which dominate him as an independent power; the "educated classes" in general to their manifold species of local narrow-mindedness and one-sidedness, to their own physical and mental short-sightedness, to their stunted growth due to their narrow specialized education and their being chained for life to this specialized activity—even when this specialized activity is merely to do nothing.

The utopians were already perfectly clear in their minds as to the effects of the division of labour, the stunting on the one hand of the labourer, and on the other of the labour function, which is restricted to the lifelong, uniform, mechanical repetition of one and the same operation. The abolition of the antithesis between town and country was demanded by Fourier, as by Owen, as the first prerequisite for the abolition of the old division of labour altogether. Both of them thought that the population should be scattered through the country in groups of sixteen hundred to three thousand persons; each group was to occupy a gigantic palace, with a household run on communal lines, in the centre of their area of land. It is true that Fourier occasionally refers to towns, but these were to consist in turn of only four or five such palaces situated near each other. Both writers would have each member of society occupied in agriculture as well as in industry; with Fourier, industry

[1] *Capital*, Vol. I, Moscow 1954, p. 422.—*Ed.*

covers chiefly handicrafts and manufacture, while Owen assigns the main role to modern industry and already demands the introduction of steam-power and machinery in domestic work. But within agriculture as well as industry both of them also demand the greatest possible variety of occupation for each individual, and in accordance with this, the training of the youth for the utmost possible all-round technical functions. They both consider that man should gain universal development through universal practical activity and that labour should recover the attractiveness of which the division of labour has despoiled it, in the first place through this variation of occupation, and through the correspondingly short duration of the "sitting"—to use Fourier's expression—devoted to each particular kind of work. Both Fourier and Owen are far in advance of the mode of thought of the exploiting classes inherited by Herr Dühring, according to which the antithesis between town and country is inevitable in the nature of things; the narrow view that a number of "entities" must in any event be condemned to the production of *one single* article, the view that desires to perpetuate the "economic species" of men distinguished by their way of life—people who take pleasure in the performance of precisely this and no other thing, who have therefore sunk so low that they *rejoice* in their own subjection and one-sidedness. In comparison with the basic conceptions even of the "idiot" Fourier's most recklessly bold fantasies; in comparison even with the paltriest ideas of the "crude, feeble, and paltry" Owen—Herr Dühring, himself still completely dominated by the division of labour, is no more than an impertinent dwarf.

In making itself the master of all the means of production to use them in accordance with a social plan, society puts an end to the former subjection of men to

their own means of production. It goes without saying that society cannot free itself unless every individual is freed. The old mode of production must therefore be revolutionized from top to bottom, and in particular the former division of labour must disappear. Its place must be taken by an organization of production in which, on the one hand, no individual can throw on the shoulders of others his share in productive labour, this natural condition of human existence; and in which, on the other hand, productive labour, instead of being a means of subjugating men, will become a means of their emancipation, by offering each individual the opportunity to develop all his faculties, physical and mental, in all directions and exercise them to the full—in which, therefore, productive labour will become a pleasure instead of being a burden.

Today this is no longer a fantasy, no longer a pious wish. With the present development of the productive forces, the increase in production that will follow from the very fact of the socialization of the productive forces, coupled with the abolition of the barriers and disturbances, and of the waste of products and means of production, resulting from the capitalist mode of production, will suffice, with everybody doing his share of work, to reduce the time required for labour to a point which, measured by our present conceptions, will be small indeed.

Nor is the abolition of the old division of labour a demand which could only be carried through to the detriment of the productivity of labour. On the contrary. Thanks to modern industry it has become a condition of production itself. "The employment of machinery does away with the necessity of crystallizing this distribution after the manner of Manufacture, by the constant annexation of a particular man to a particular function. Since

the motion of the whole system does not proceed from the workman, but from the machinery, a change of persons can take place at any time without an interruption of the work.... Lastly, the quickness with which machine-work is learnt by young people, does away with the necessity of bringing up for exclusive employment by machinery, a special class of operatives."[1] But while the capitalist mode of employment of machinery necessarily perpetuates the old division of labour with its fossilized specialization, although it has become superfluous from a technical standpoint, the machinery itself rebels against this anachronism. The technical basis of modern industry is revolutionary. "By means of machinery, chemical processes and other methods, it is continually causing changes not only in the technical basis of production, but also in the functions of the labourer, and in the social combinations of the labour process. At the same time, it thereby also revolutionizes the division of labour within the society, and incessantly launches masses of capital and of workpeople from one branch of production to another. Modern industry, by its very nature, therefore necessitates variation of labour, fluency of function, universal mobility of the labourer.... We have seen how this absolute contradiction ... vents its rage ... in the incessant human sacrifices from among the working class, in the most reckless squandering of labour-power, and in the devastation caused by social anarchy. This is the negative side. But if, on the one hand, variation of work at present imposes itself after the manner of an overpowering natural law, and with the blindly destructive action of a natural law that meets with resistance at all points, modern industry, on the other hand, through its catastrophes imposes the necessity of recognizing, as

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[1] *Capital*, Vol. I, Moscow 1954, p. 421.—*Ed.*

a fundamental law of production, variation of work, consequently fitness of the labourer for varied work, consequently the greatest possible development of his varied aptitudes. It becomes a question of life and death for society to adapt the mode of production to the normal functioning of this law. Modern industry, indeed, compels society, under penalty of death, to replace the detail-worker of today, crippled by lifelong repetition of one and the same trivial operation, and thus reduced to the mere fragment of a man, by the fully developed individual, fit for a variety of labours, ready to face any change of production, and to whom the different social functions he performs, are but so many modes of giving free scope to his own natural and acquired powers" (Marx, *Capital*).[1]

Modern industry, which has taught us to convert the movement of molecules, something more or less universally feasible, into the movement of masses for technical purposes, has thereby to a considerable extent freed production from restrictions of locality. Water-power was local; steam-power is free. While water-power is necessarily rural, steam-power is by no means necessarily urban. It is capitalist utilization which concentrates it mainly in the towns and changes factory villages into factory towns. But in so doing it at the same time undermines the conditions under which it operates. The first requirement of the steam-engine, and a main requirement of almost all branches of production in modern industry, is relatively pure water. But the factory town transforms all water into stinking manure. However much therefore urban concentration is a basic condition of capitalist production, each individual industrial capitalist is constantly striving to get away from the large towns nec-

[1] *Capital*, Vol. I, Moscow 1954, pp. 487-88.—*Ed.*

essarily created by this concentration, and to transfer his plant to the countryside. This process can be studied in detail in the textile industry districts of Lancashire and Yorkshire; modern capitalist industry is constantly bringing new large towns into being there by constant flight from the towns into the country. The situation is similar in the metal-working districts where, in part, other causes produce the same effects.

Once more, only the abolition of the capitalist character of modern industry can bring us out of this new vicious circle, can resolve this contradiction in modern industry, which is constantly reproducing itself. Only a society which makes it possible for its productive forces to dovetail harmoniously into each other on the basis of one single vast plan can allow industry to be distributed over the whole country in the way best adapted to its own development, and to the maintenance and development of the other elements of production.

Accordingly, abolition of the antithesis between town and country is not merely possible. It has become a direct necessity of industrial production itself, just as it has become a necessity of agricultural production and, besides, of public health. The present poisoning of the air, water and land can be put an end to only by the fusion of town and country; and only such fusion will change the situation of the masses now languishing in the towns, and enable their excrement to be used for the production of plants instead of for the production of disease.

Capitalist industry has already made itself relatively independent of the local limitations arising from the location of sources of the raw materials it needs. The textile industry works up, in the main, imported raw materials. Spanish iron ore is worked up in England and Germany, and Spanish and South-American copper ores,

in England. Every coal-field now supplies fuel to an industrial area beyond its own borders, an area which is widening every year. Along the whole of the European coast steam-engines are driven by English and to some extent also by German and Belgian coal. Society liberated from the barriers of capitalist production can go much further still. By generating a race of producers with an all-round training who understand the scientific basis of industrial production as a whole, and each of whom has had practical experience in a whole series of branches of production from start to finish, this society will bring into being a new productive force which will abundantly compensate for the labour required to transport raw materials and fuel from great distances.

The abolition of the separation of town and country is therefore not utopian, also, in so far as it is conditioned on the most equal distribution possible of modern industry over the whole country. It is true that in the huge towns civilization has bequeathed us a heritage which it will take much time and trouble to get rid of. But it must and will be got rid of, however protracted a process it may be. Whatever destiny may be in store for the German Empire of the Prussian nation, Bismarck can go to his grave proudly aware that the desire of his heart is sure to be fulfilled: the great towns will perish.

And now see how puerile Herr Dühring's notions are—that society can take possession of all means of production in the aggregate without revolutionizing from top to bottom the old method of production and first of all putting an end to the old division of labour; that everything will be in order once "natural aptitudes and personal capabilities are taken into account"—that therefore whole masses of entities will remain, as in the past, subjected to the production of *one single* article; whole "populations" will be engaged in a single branch

of production, and humanity continue divided, as in the past, into a number of different crippled "economic species," for there still are "porters" and "architects." Society is to become master of the means of production as a whole, in order that each individual may remain the slave of his means of production, and have only a choice as to *which* means of production are to enslave him. And see also how Herr Dühring considers the separation of town and country as "inevitable in the nature of things," and can find only a tiny palliative in schnaps-distilling and beet-sugar manufacturing—two, in their connection specifically Prussian, branches of industry; how he makes the distribution of industry over the country dependent on certain future inventions and on the *necessity* of associating industry directly with the procurement of raw materials—raw materials which are already used at an ever-increasing distance from their place of origin! And Herr Dühring finally tries to cover his retreat by assuring us that in the long run social wants will carry through the union between agriculture and industry even *against* economic considerations, as if this would be some economic sacrifice!

Certainly, to be able to see that the revolutionary elements, which will do away with the old division of labour, along with the separation of town and country, and will revolutionize the whole of production; see that these elements are already contained in embryo in the productive conditions of modern large-scale industry and that their development is hindered by the existing capitalist mode of production—to be able to see these things, it is necessary to have a somewhat wider horizon than the sphere of jurisdiction of the Prussian *Landrecht*, than the country where production of schnaps and beet-sugar are the key industries, and where commercial crises can be studied on the book market. To be

able to see these things it is necessary to have some knowledge of real large-scale industry in its historical growth and in its present actual form, especially in the one country where it has its home and where alone it has attained its classical development. Then no one will think of attempting to vulgarize modern scientific socialism and to degrade it into Herr Dühring's *specifically Prussian socialism.*

IV

DISTRIBUTION

We have already seen that Dühringian economics comes down to the following proposition: the capitalist mode of *production* is quite good, and can remain in existence, but the capitalist mode of *distribution* is of evil, and must disappear. We now find that Herr Dühring's "socialitarian" system is nothing more than the carrying through of this principle in fantasy. In fact, it turned out that Herr Dühring has practically nothing to take exception to in the mode of production—as such—of capitalist society, that he wants to retain the old division of labour in all its essentials, and that he consequently has hardly a word to say in regard to production within his economic commune. Production is indeed a sphere in which robust facts are dealt with, and in which, consequently, "rational fantasy" should give but little scope to the soaring of its free soul, because the danger of making a disgraceful blunder is too great. It is quite otherwise with distribution—which in Herr Dühring's view has no connection whatever with production and is determined not by production but by a pure act of the will—distribution is the predestined field of his "social alchemizing."

To the equal obligation to produce corresponds the equal right to consume, exercised in an organized manner in the economic commune and in the trading commune embracing a large number of economic communes.

"Labour . . . is here exchanged for other labour on the basis of equal valuation. . . . Service and counter-service represent here real equality between quantities of labour." And this "equalization of human energies" applies "whether the individuals have in fact done more or less, or perhaps *even nothing at all*"; for all performances, in so far as they involve time and energy, can be regarded as labour done—therefore even playing bowls or going for a walk. This exchange, however, does not take place between individuals as the community is the owner of all means of production and consequently also of all products; on the one hand it takes place between each economic commune and its individual members, and on the other between the various economic and trading communes themselves. "The individual economic communes in particular will replace retail trade within their own areas by completely planned sales." Wholesale trade will be organized on the same lines: "The system of the free economic society. . . consequently remains a vast exchange institution, whose operations are carried out on the basis provided by the precious metals. It is insight into the inevitable necessity of this fundamental quality which distinguishes our scheme from all those foggy notions which cling even to the most rational forms of current socialist ideas."

For the purposes of this exchange, the economic commune, as the first appropriator of the social products, has to determine, "for each type of articles, a uniform price," based on the average production costs. "The significance which the so-called costs of production have for value and price today, will be provided (in the socialitarian system) by the estimates of the quantity of labour to be employed. These estimates, by virtue of the principle of equal rights for each individual also in the economic sphere, can be traced back, in the last analysis, to con-

sideration of the number of persons that participated in the labour; they will give the relation of prices corresponding both to the natural relations of production and to the social right of realization. The output of the precious metals will continue, as now, to determine the value of money.... It can be seen from this that in the changed constitution of society, one not only does not lose the determining factor and measure, in the first place of values, and, with value, of the exchange relations between products, but wins them good and proper for the first time." The famous "absolute value" is at last realized.

On the other hand, however, the commune must also put its individual members in a position to buy from it the articles produced, by paying to each, in compensation for his labour, a certain sum of money, daily, weekly or monthly, but necessarily the same for all. "From the socialitarian standpoint it is consequently a matter of indifference whether we say that wages disappear, or, that they must become the exclusive form of economic income." Equal wages and equal prices, however, establish "quantitative, if not qualitative equality of consumption," and thereby the "universal principle of justice" is realized in the economic sphere. As to how the level of this wage of the future is to be determined, Herr Dühring tells us only that here too, as in all other cases, there will be an exchange of "equal labour for equal labour." For six hours of labour, therefore, a sum of money will be paid which also embodies in itself six hours of labour.

Nevertheless, the "universal principle of justice" must not in any way be confounded with that crude levelling down which makes the bourgeois so indignantly oppose all communism, and especially the spontaneous communism of the workers. It is by no means so inexorable as it would like to appear. The "equality in principle of

economic rights does not exclude the *voluntary* addition to what justice requires of an expression of special recognition and honour.... Society *honours itself* in conferring distinction on the higher types of efficiency at work *by a moderate additional allocation* for consumption." And Herr Dühring, too, honours himself, when, combining the innocence of a dove with the subtleness of a serpent, he displays such touching concern for the moderate additional consumption of the Dührings of the future.

This will finally do away with the capitalist mode of distribution. For "supposing under such conditions someone actually had a surplus of private means at his disposal, he would not be able to find any use for it as capital. No individual and no group would acquire it from him for production, except by way of exchange or purchase, but neither would ever have occasion to pay him interest or profit." Hence "inheritance conforming to the principle of equality" would be permissible. It cannot be dispensed with, for "a certain form of inheritance will always be a necessary accompaniment of the family principle." But even the right of inheritance "will not be able to lead to any amassing of considerable wealth, as the building up of property ... can never again aim at the creation of means of production and purely fund-holder existences."

And this fortunately completes the economic commune. Let us now have a look at how it works.

We assume that all of Herr Dühring's preliminary conditions are completely realized; we therefore take it for granted that the economic commune pays to each of its members, for six hours of labour a day, a sum of money, say twelve shillings, in which likewise six hours of labour is embodied. We assume further that prices exactly correspond to values, and therefore, on our assumptions, cover only the costs of raw materials, the wear and tear of machinery, the consumption of instruments of labour

and the wages paid. An economic commune of a hundred working members would then produce in a day commodities to the value of twelve hundred shillings, £60; and in a year of 300 working-days, £18,000. It pays the same sum to its members, each of whom does as he likes with his share, which is twelve shillings a day or £180 a year. At the end of a year, and at the end of a hundred years, the commune is no richer than it was at the beginning. During this whole period it will never once be in a position to provide even the moderate additional allocation for Herr Dühring's consumption, unless it cares to take it from its stock of means of production. Accumulation is completely forgotten. Even worse: as accumulation is a social necessity, and the retention of money provides a convenient form of accumulation, the organization of the economic commune directly impels its members to accumulate privately, and thereby leads it to its own destruction.

How can this conflict in the nature of the economic commune be avoided? It might take refuge in his beloved "taxes," the price surcharge, and sell its annual production for £24,000 instead of £18,000. But as all other economic communes are in the same position, and would therefore act in the same way, each of them, in its exchanges with the others, would have to pay just as much "taxes" as it pockets itself, and the "tribute" would thus have to fall on its own members alone.

Or the economic commune might settle the matter without more ado by paying to each member, for six hours of labour, the product of less than six hours, say, of four hours, of labour; that is to say, instead of twelve shillings only eight shillings a day, leaving the prices of commodities, however, at their former level. In this case it does directly and openly what it strived to do in a hidden and indirect way in the former case: it forms Marxian

surplus-value to the amount of £6,000 annually, by paying its members, on outright capitalist lines, less than the value of what they produce, while it sells them commodities, which they can only buy from it, at their full value. The economic commune can therefore secure a reserve fund only by revealing itself as an "ennobled" truck system[1] on the widest possible communist basis.

So have your choice: either the economic commune exchanges "equal labour for equal labour," and in this case it cannot accumulate a fund for the maintenance and extension of production, but only the individual members can do this; or it does form such a fund, but in this case it does not exchange "equal labour for equal labour."

Such is the content of exchange in the economic commune. What of its form? The exchange is effected through the medium of metal money, and Herr Dühring is not little proud of the "world-historic import" of this reform. But in the trading between the commune and its members the money is not money at all, it does not function in any way as money. It serves as a mere labour certificate; to use Marx's phrase, it "is merely evidence of the part taken by the individual in the common labour, and of his right to a certain portion of the common produce destined for consumption," and in carrying out this function, it is "no more 'money' than a ticket for the theatre."[2] It can therefore be replaced by any other token, just as Weitling replaces it by a "ledger," in which the labour-hours worked are entered on one side and means of subsistence taken as compensation on the other. In a word, in the trading of the economic commune with its members it functions merely as Owen's "labour money,"

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[1] The truck system in England, also well known in Germany, is that system under which the manufacturers themselves run shops and compel their workers to buy their goods there. [*Note by Engels.*]

[2] *Capital*, Vol. I, p. 94, footnote.—*Ed.*

that "phantom" which Herr Dühring looks down upon so disdainfully, but nevertheless is himself compelled to introduce into his economics of the future. Whether the token which certifies the measure of fulfilment of the "obligation to produce," and thus of the earned "right to consume" is a scrap of paper, a counter or a gold coin is absolutely of no consequence for *this* purpose. For other purposes, however, it is by no means immaterial, as we shall see.

If therefore, in the trading of an economic commune with its members, metallic money does not function as money but as a disguised labour certificate, it performs its money function even less in exchange between the different economic communes. In this exchange, on the assumptions made by Herr Dühring, metal money is totally superfluous. In fact, mere book-keeping would suffice, which would effect the exchange of products of equal labour for products of equal labour far more simply if it used the natural measure of labour—time, with the labour-hour as unit—than if it first converted the labour-hours into money. The exchange is in reality simple exchange in kind; all balances are easily and simply settled by drafts on other communes. But should a commune really have a deficit in its dealings with other communes, all "the gold existing in the universe," "money by nature" though it be, could not save this commune from the fate of having to make good this deficit by increasing the quantity of its own labour, if it does not want to fall into a position of dependence on other communes on account of its debt. But let the reader always bear in mind that we are not ourselves constructing any edifice of the future; we are merely accepting Herr Dühring's assumptions and drawing the inevitable conclusions from them.

Thus neither in exchange between the economic commune and its members nor in exchange between the

different communes can gold, which is "money by nature," get to realize this its nature. Nevertheless, Herr Dühring assigns to it the function of money even in the "socialitarian" system. Hence, we must see if there is any other field in which its money function can be exercised. And this field exists. Herr Dühring gives everyone a right to "quantitatively equal consumption," but he cannot compel anyone to exercise it. On the contrary, he is proud that in the world he has created everyone can do what he likes with his money. He therefore cannot prevent some from setting aside a small money hoard, while others are unable to make ends meet on the wage paid to them. He even makes this inevitable by explicitly recognizing in the right of inheritance that family property should be owned in common; whence comes also the obligation of the parents to maintain their children. But this makes a wide breach in quantitatively equal consumption. The bachelor lives like a lord, happy and content with his eight or twelve shillings a day, while the widower with eight minor children finds it very difficult to manage on this sum. On the other hand, by accepting money in payment without any question, the commune leaves open the door to the possibility that this money may have been obtained otherwise than by the individual's own labour. *Non olet.*[1] The commune does not know where it comes from. But in this way all conditions are created permitting metallic money, which hitherto played the role of a mere labour certificate, to exercise its real money function. Both the opportunity and the motive are present, on the one hand to form a hoard, and on the other to run into debt. The needy individual borrows from the individual who builds up a hoard. The borrowed money, accepted by the commune in payment for means of subsistence, once more becomes what it is in present-day society, the

[1] It (money) does not smell.—*Ed.*

social incarnation of human labour, the real measure of labour, the general medium of circulation. All the "laws and administrative regulations" in the world are just as powerless against it as they are against the multiplication table or the chemical composition of water. And as the builder of the hoard is in a position to extort interest from people in need, usury is restored along with metallic money functioning as money.

Up to this point we have only considered the effects of a retention of metallic money within the field of operation of the Dühring economic commune. But outside this field the rest of the world, the profligate world, meanwhile carries on contentedly in the old accustomed way. On the world market gold and silver remain *world money,* a general means of purchase and payment, the absolute social embodiment of wealth. And this property of the precious metal gives the individual members of the economic communes a new motive to accumulate a hoard, get rich, exact usury; the motive to manoeuvre freely and independently with regard to the commune and beyond its borders, and to realize on the world market the private wealth which they have accumulated. The usurers are transformed into dealers in the medium of circulation, bankers, controllers of the medium of circulation and of world money, and thus into controllers of production, and thus into controllers of the means of production, even though these may still for many years be registered nominally as the property of the economic and trading communes. And so the hoarders and usurers, transformed into bankers, become the masters also of the economic and trading communes themselves. Herr Dühring's "socialitarian" system is indeed quite fundamentally different from the "hazy notions" of the other Socialists. It has no other purpose but the recreation of high finance, under whose control and for whose pecuniary advantage

it will labour valiantly—if it should ever happen to be established and to hold together. Its one hope of salvation would lie in the amassers of hoards preferring, by means of their world money, to run away from the commune with all possible speed.

Ignorance of earlier socialist thought is so widespread in Germany that an innocent youth might at this point raise the question whether, for example, Owen's labour-notes might not lead to a similar abuse. Although we are here not concerned with developing the significance of these labour-notes, space should be given to the following for the purpose of contrasting Dühring's "comprehensive schematism" with Owen's "crude, feeble and meagre ideas": in the first place, such a misuse of Owen's labour-notes would require their conversion into real money, while Herr Dühring presupposes real money, though attempting to prohibit it from functioning otherwise than as mere labour certificate. While in Owen's scheme there would have to be a real abuse, in Dühring's scheme the immanent nature of money, which is independent of human volition, would assert itself; the specific, correct use of money would assert itself in spite of the misuse which Herr Dühring tries to impose on it owing to his own ignorance of the nature of money. Secondly, with Owen the labour-notes are only a transitional form to complete community and free utilization of the resources of society; and incidentally at most also a means designed to make communism plausible to the British public. If therefore any form of misuse should compel Owen's society to do away with the labour-notes, the society would take a step forward towards its goal, entering upon a more complete stage of its development. But if the Dühringian economic commune abolishes money, it at one blow destroys its "world-historic import," it puts an end to its

peculiar beauty, ceases to be the Dühring economic commune and sinks to the level of the befogged notions to lift it from which Herr Dühring has devoted so much of the hard labour of his rational fantasy.[1]

What, then, is the source of all the strange errors and entanglements amid which the Dühring economic commune meanders? Simply the fog which, in Herr Dühring's mind, envelops the concepts of value and money, and finally drives him to attempt to discover the value of labour. But as Herr Dühring has not by any means the monopoly of such fogginess for Germany, but on the contrary meets with many competitors, we will "overcome our reluctance for a moment and solve the knot" which he has contrived to make here.

The only value known in economics is the value of commodities. What are commodities? Products made in a society of more or less separate private producers, and therefore in the first place private products. These private products, however, become commodities only when they are made, not for consumption by their producers, but for consumption by others, that is, for social consumption; they enter into social consumption through exchange. The private producers are therefore socially interconnected, constitute a society. Their products, although the private products of each individual, are therefore simultaneously, but unintentionally and as it were involuntarily, also social products. In what, then, consists the social character of these private products? Evidently in two peculiari-

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[1] It may be noted in passing that the part played by labour-notes in Owen's communist society is completely unknown to Herr Dühring. He knows these notes—from Sargant—only in so far as they figure in the Labour Exchange Bazaars, which of course were failures—inasmuch as they were attempts by means of the direct exchange of labour to pass from existing society into communist society. [*Note by Engels.*]

ties: first, that they all satisfy some human want, have a use-value not only for the producers but also for others; and secondly, that although they are products of the most varied individual labour, they are at the same time products of human labour as such, of general human labour. In so far as they have a use-value also for other persons, they can, generally speaking, enter into exchange; in so far as general human labour, the simple expenditure of human labour-power is incorporated in all of them, they can be compared with each other in exchange, be said to be equal or unequal, according to the quantity of this labour embodied in each. In two equal products made individually, social conditions being equal, an unequal quantity of individual labour may be contained, but always only an equal quantity of general human labour. An unskilled smith may make five horseshoes in the time a skilful smith makes ten. But society does not form value from the accidental lack of skill of an individual; it recognizes as general human labour only labour of a normal average degree of skill at the particular time. In exchange, therefore, one of the five horseshoes made by the first smith has no more value than one of the ten made by the other in an equal time. Individual labour contains general human labour only in so far as it is socially necessary.

Therefore when I say that a commodity has a particular value, I say (1) that it is a socially useful product; (2) that it has been produced by a private individual for private account; (3) that, although a product of individual labour, it is nevertheless at the same time and as it were unconsciously and involuntarily, also a product of social labour and, be it noted, of a definite quantity of this labour, ascertained in a social way, through exchange; (4) I express this quantity not in labour itself, in so and so many labour-hours, but *in another commodity*. If there-

fore I say that this clock is worth as much as that piece of cloth and each of them is worth fifty shillings, I say that an equal quantity of social labour is contained in the clock, the cloth and the money. I therefore assert that the social labour-time represented in them has been socially measured and found to be equal. But not directly, absolutely, as labour-time is usually measured, in labour-hours or days, etc., but in a roundabout way, through the medium of exchange, relatively. That is why I cannot express this definite quantity of labour-time in labour-hours—how many of them remains unknown to me—but also only in a roundabout way, relatively, in another commodity, which represents an equal quantity of social labour-time. The clock is worth as much as the piece of cloth.

But the production and exchange of commodities, while compelling the society based on them to take this roundabout way, likewise compel it to make the detour as short as possible. They single out from the commonalty of commodities one sovereign commodity in which the value of all other commodities can be expressed once and for all; a commodity which serves as the direct incarnation of social labour, and is therefore directly and unconditionally exchangeable for all commodities—money. Money is already contained in embryo in the concept of value; it is value, only in developed form. But since the value of commodities, as opposed to the commodities themselves, assumes independent existence in money, a new factor appears in the society which produces and exchanges commodities, a factor with new social functions and effects. We need only state this point at the moment, without going more closely into it.

The political economy of commodity production is by no means the only science which has to deal with factors known only relatively. The same is true of physics, where

we do not know how many separate gas molecules are contained in a given volume of gas, pressure and temperature being also given. But we know that, so far as Boyle's law is correct, such a given volume of any gas contains as many molecules as an equal volume of any other gas at the same pressure and temperature. We can therefore compare the molecular content of the most diverse volumes of the most diverse gases under the most diverse conditions of pressure and temperature; and if we take as the unit one litre of gas at 0°C and 760 mm. pressure, we can measure the above molecular content by this unit.

In chemistry the absolute atomic weights of the various elements are also not known to us. But we know them relatively, inasmuch as we know their reciprocal relations. Hence, just as commodity production and its economics obtain a relative expression for the to it unknown quantities of labour contained in the various commodities, by comparing these commodities on the basis of their relative labour content, so chemistry obtains a relative expression for the magnitude of the atomic weights unknown to it by comparing the various elements on the basis of their atomic weights, expressing the atomic weight of one element in multiples or fractions of the other (sulphur, oxygen, hydrogen). And just as commodity production elevates gold to the level of the absolute commodity, the general equivalent of all other commodities, the measure of all values, so chemistry promotes hydrogen to the rank of the chemical money commodity, by fixing its atomic weight at 1 and reducing the atomic weights of all other elements to hydrogen, expressing them in multiples of its atomic weight.

Commodity production, however, is by no means the only form of social production. In the ancient Indian communities and in the family communities of the southern

Slavs, products are not transformed into commodities. The members of the community are directly associated for production; the work is distributed according to tradition and requirements, and likewise the products to the extent that they are destined for consumption. Direct social production and direct distribution preclude all exchange of commodities, therefore also the transformation of the products into commodities (at any rate within the community) and consequently also their transformation into *values*.

From the moment when society enters into possession of the means of production and uses them in direct association for production, the labour of each individual, however varied its specifically useful character may be, becomes at the start and directly social labour. The quantity of social labour contained in a product need not then be established in a roundabout way; daily experience shows in a direct way how much of it is required on the average. Society can simply calculate how many hours of labour are contained in a steam-engine, a bushel of wheat of the last harvest, or a hundred square yards of cloth of a certain quality. It could therefore never occur to it still to express the quantities of labour put into the products, quantities which it will then know directly and in their absolute amounts, in a third product, in a measure which, besides, is only relative, fluctuating, inadequate, though formerly unavoidable for lack of a better, rather than express them in their natural, adequate and absolute measure, *time*. Just as little as it would occur to chemical science still to express atomic weights in a roundabout way, relatively, by means of the hydrogen atom, if it were able to express them absolutely, in their adequate measure, namely in actual weights, in billionths or quadrillionths of a gramme. Hence, on the assumptions we made above, society will not assign values to products. It will not express the simple fact that the hundred square yards

of cloth have required for their production, say, a thousand hours of labour in the oblique and meaningless way, stating that they have the *value* of a thousand hours of labour. It is true that even then it will still be necessary for society to know how much labour each article of consumption requires for its production. It will have to arrange its plan of production in accordance with its means of production, which include, in particular, its labour-power. The useful effects of the various articles of consumption, compared with one another and with the quantities of labour required for their production, will in the end determine the plan. People will be able to manage everything very simply, without the intervention of much-vaunted "value."[1]

The concept of value is the most general and therefore the most comprehensive expression of the economic conditions of commodity production. Consequently, this concept contains the germ, not only of money, but also of all the more developed forms of the production and exchange of commodities. The fact that value is the expression of the social labour contained in the privately produced products itself creates the possibility of a difference arising between this social labour and the private labour contained in these same products. If therefore a private producer continues to produce in the old way, while the social mode of production develops, this difference will become palpably evident to him. The same

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[1] As long ago as 1844 I stated that the above-mentioned balancing of useful effects and expenditure of labour on making decisions concerning production was all that would be left, in a communist society, of the politico-economic concept of value. [See *Umrisse zu einer Kritik der Nationalökonomie.* Marx-Engels. Gesamtausgabe, 1. Abt. Bd. 2, S. 379-404.—*Ed.*] The scientific justification for this statement, however, as can be seen, was made possible only by Marx's *Capital.* [*Note by Engels.*]

result follows when the aggregate of private producers of a particular class of goods produces a quantity of them which exceeds the requirements of society. The fact that the value of a commodity is expressed only in terms of another commodity, and can only be realized in exchange for it, admits of the possibility that the exchange may never take place altogether, or at least may not realize the correct value. Finally, when the specific commodity labour-power appears on the market, its value is determined, like that of any other commodity, by the labour-time socially necessary for its production. The value form of products therefore already contains in embryo the whole capitalist form of production, the antagonism between capitalists and wage-workers, the industrial reserve army, crises. To seek to abolish the capitalist form of production by establishing "true value" is therefore tantamount to attempting to abolish catholicism by establishing the "true" Pope, or to set up a society in which at last the producers control their products, by consistently carrying into life an economic category which is the most comprehensive expression of the enslavement of the producers by their own product.

Once the commodity-producing society has further developed the value form, which is inherent in commodities as such, to the money form, various germs still hidden in value break through to the light of day. The first and most essential effect is the generalization of the commodity form. Money forces the commodity form even on the objects which have hitherto been produced directly for self-consumption; it drags them into exchange. Thereby the commodity form and money penetrate the internal husbandry of the communities directly associated for production; they break one tie of communion after another, and dissolve the community into a mass of private producers. At first, as can be seen in India, money replaces

joint tillage of the soil by individual tillage; at a later stage it puts an end to the common ownership of the tillage area, which still manifests itself in periodical redistribution, by a final division (for example, in the village communities on the Moselle; and it is now beginning also in the Russian village communes); finally, it forces the dividing-up of whatever woodland and pasturage is still owned in common. Whatever other causes arising in the development of production are also operating here, money always remains the most powerful means through which their influence is exerted on the communities. And, despite all "laws and administrative regulations," money would with the same natural necessity inevitably break up the Dühring economic commune, if it ever came into existence.

We have already seen above ("Political Economy," VI) that it is a contradiction in itself to speak of the value of labour. As under certain social relations labour produces not only products but also value, and this value is measured by labour, the latter can as little have a separate value as weight, as such, can have a separate weight or heat, a separate temperature. But it is the characteristic peculiarity of all social confusion that ruminates on "true value" to imagine that in existing society the worker does not receive the full "value" of his labour, and that socialism is destined to remedy this. Hence it is necessary in the first place to discover what the value of labour is, and this is done by attempting to measure labour, not by its adequate measure, time, but by its product. The worker should receive the "full proceeds of labour." Not only the labour product, but labour itself should be directly exchangeable for products; one hour's labour for the product of another hour's labour. This, however, gives rise at once to a very "serious" hitch. The *whole product* is distributed. The most important progressive function of society, accumulation, is taken from society and put into the

hands, placed at the arbitrary discretion, of individuals. The individuals can do what they like with their "proceeds," but society at best remains as rich or poor as it was. The means of production accumulated in the past have therefore been centralized in the hands of society only in order that all means of production accumulated in the future may once again be dispersed in the hands of individuals. One knocks to pieces one's own premises; one has arrived at a pure absurdity.

Fluid labour, active labour-power, is to be exchanged for the product of labour. Then labour-power is a commodity, just like the product for which it is to be exchanged. Then the value of this labour-power is not in any sense determined by its product, but by the social labour embodied in it, according to the present law of wages.

But it is precisely this which must not be, we are told. Fluid labour, labour-power, should be exchangeable for its full product. That is to say, it should be exchangeable not for its *value*, but for its *use-value*; the law of value is to apply to all other commodities, but must be repealed so far as labour-power is concerned. Such is the self-destructive confusion that lies behind the "value of labour."

The "exchange of labour for labour on the principle of equal valuation," in so far as it has any meaning, that is to say, the mutual exchangeability of products of equal social labour, hence the law of value, is the fundamental law of precisely commodity production, hence also of its highest form, capitalist production. It asserts itself in present-day society in the only way in which economic laws can assert themselves in a society of private producers: as a blindly operating law of nature inherent in things and relations, and independent of the will or actions of the producers. By elevating this law to the basic law of his economic commune and demanding that

the commune should execute it in all consciousness, Herr Dühring converts the basic law of existing society into the basic law of his imaginary society.He wants existing society, but without its abuses. In this he occupies the same position as Proudhon. Like him, he wants to abolish the abuses which have arisen out of the development of commodity production into capitalist production, by giving effect against them to the basic law of commodity production, precisely the law to whose operation these abuses are due. Like him, he wants to abolish the real consequences of the law of value by means of fantastic ones.

Our modern Don Quixote, seated on his noble Rosinante, "the universal principle of justice," and followed by his valiant Sancho Panza, Abraham Enss,[1] sets out proudly on his knight errantry to win Mambrino's helmet, "the value of labour"; but we fear, fear greatly, he will bring home nothing but the old familiar barber's basin.

[1] *Abraham Enss*: Author of a pasquinade (1877) directed against Marx and Engels.—*Ed.*

V

STATE, FAMILY, EDUCATION

With the two last chapters we have about exhausted the economic content of Herr Dühring's "new socialitarian system." The only point we might add is that his "universal range of historical survey" does not in the least prevent him from safeguarding his own special interests, even apart from the moderate surplus consumption referred to above. As the old division of labour continues to exist in the socialitarian system, the economic commune will have to reckon not only with architects and porters, but also with professional writers, and the question will then arise how authors' rights are to be dealt with. This question is one which occupies Herr Dühring's attention more than any other. Everywhere, for example, in connection with Louis Blanc and Proudhon, the reader stumbles across the question of authors' rights, until it is finally brought safely into the haven of "sociality," after a circumstantial discussion occupying nine full pages of the *Course*, in the form of a mysterious "remuneration of labour"—whether with or without moderate surplus consumption is not stated. A chapter on the position of fleas in the natural system of society would have been just as appropriate and in any case far less tedious.

The *Philosophy* gives detailed prescriptions for the organization of the state of the future. Here Rousseau, although "the sole important forerunner" of Herr Dühring, nevertheless did not lay the foundations deep enough; his more profound successor puts this right by

completely watering down Rousseau and mixing in remnants of the Hegelian philosophy of right, also reduced to a watery mess. "The sovereignty of the individual" forms the basis of the Dühringian state of the future; it is not to be suppressed by the rule of the majority, but to find its real culmination in it. How does this work? Very simply. "If one presupposes agreements between each individual and every other individual in all directions, and if the object of these agreements is mutual aid against unjust offences—then the power required for the maintenance of right is only strengthened, and right is not deduced from the mere superior strength of the many against the individual or of the majority against the minority." Such is the ease with which the living force of the hocus-pocus of the philosophy of reality surmounts the most impassable obstacles; and if the reader thinks that after that he is no wiser than he was before, Herr Dühring replies that he really must not think it is such a simple matter, for "*the slightest error* in the conception of the role of the collective will would *destroy* the sovereignty of the individual, and this sovereignty is the only thing (!) conducive to the deduction of real rights." Herr Dühring treats his public as it deserves, when he makes game of it. He could have laid it on much thicker; the students of the philosophy of reality would not have noticed it anyhow.

Now the sovereignty of the individual consists essentially in that "the individual is *subject to absolute compulsion* by the state"; this compulsion, however, can only be justified in so far as it "really serves natural justice." With this end in view there will be "legislative and judicial authority," which, however, "must remain in the hands of the community"; and there will also be an alliance for defence, which will find expression in "joint action in the army or in an executive section for the main-

tenance of internal security"—that is to say, there will also be army, police, *gendarmerie*. Herr Dühring has many times already shown that he is a good Prussian; here he proves himself a peer of that model Prussian, who, as the late Minister von Rochow put it, "carries his gendarme in his breast." This *gendarmerie* of the future, however, will not be so dangerous as the police thugs of the present day. Whatever the sovereign individual may suffer at their hands, he will always have *one consolation*: "the right or wrong which, according to the circumstances, may then be dealt to him by free society can never be *any worse* than that which the *state of nature* would have brought with it!" And then, after Herr Dühring has once more tripped us up on those authors' rights of his which are always getting in the way, he assures us that in his world of the future there will be, "of course, an absolutely free Bar available to all." "The free society, as it is conceived today," gets steadily more and more mixed. Architects, porters, professional writers, gendarmes, and now also barristers! This "world of sober and critical thought" and the various heavenly kingdoms of the different religions, in which the believer always finds in transfigured form the things which have sweetened his earthly existence, are as like as two peas. And Herr Dühring is a citizen of the state where "everyone can be happy in his own way." What more do we want?

But it does not matter what we want. What matters is what Herr Dühring wants. And he differs from Frederick II in this, that in the Dühringian future state certainly not everyone will be able to be happy in his own way. The constitution of this future state provides: "In the free society there can be no religious worship; *for* every member of it has got beyond the primitive childish superstition that there are beings, behind nature or above it, who can be influenced by sacrifices or prayers." A

"socialitarian system, rightly conceived, *has* therefore ... *to abolish* all the paraphernalia of religious magic, and therewith all the essential elements of religious worship." Religion is being prohibited.

All religion, however, is nothing but the fantastic reflection in men's minds of those external forces which control their daily life, a reflection in which the terrestrial forces assume the form of supernatural forces. In the beginnings of history it was the forces of nature which were first so reflected, and which in the course of further evolution underwent the most manifold and varied personifications among the various peoples. This early process has been traced back by comparative mythology, at least in the case of the Indo-European peoples, to its origin in the Indian Vedas, and in its further evolution it has been demonstrated in detail among the Indians, Persians, Greeks, Romans, Germans and, so far as material is available, also among the Celts, Lithuanians and Slavs. But it is not long before, side by side with the forces of nature, social forces begin to be active—forces which confront man as equally alien and at first equally inexplicable, dominating him with the same apparent natural necessity as the forces of nature themselves. The fantastic figures, which at first only reflected the mysterious forces of nature, at this point acquire social attributes, become representatives of the forces of history.[1] At a still further stage

[1] This two-fold character assumed later on by the divinities was one of the causes of the subsequently wide-spread confusion of mythologies—a cause which comparative mythology has overlooked, as it pays attention exclusively to their character as reflections of the forces of nature. Thus in some Germanic tribes the war-god is called Tyr (Old Nordic) or Zio (Old High German), corresponds therefore to the Greek Zeus, Latin Jupiter for Diu-piter; in other Germanic tribes, Er, Eor, corresponds therefore to the Greek Ares, Latin Mars. [*Note by Engels.*]

of evolution, all the natural and social attributes of the numerous gods are transferred to *one* almighty god, who is but a reflection of the abstract man. Such was the origin of monotheism, which was historically the last product of the vulgarized philosophy of the later Greeks and found its incarnation in the exclusively national god of the Jews, Jehovah. In this convenient, handy and universally adaptable form, religion can continue to exist as the immediate, that is, the sentimental form of men's relation to the alien, natural and social, forces which dominate them, so long as men remain under the control of these forces. However, we have seen repeatedly that in existing bourgeois society men are dominated by the economic conditions created by themselves, by the means of production which they themselves have produced, as if by an alien force. The actual basis of the reflective activity that gives rise to religion therefore continues to exist, and with it the religious reflection itself. And although bourgeois political economy has given a certain insight into the causal connection of this alien domination, this makes no essential difference. Bourgeois economics can neither prevent crises in general, nor protect the individual capitalists from losses, bad debts and bankruptcy, nor secure the individual workers against unemployment and destitution. It is still true that man proposes and God (that is, the alien domination of the capitalist mode of production) disposes. Mere knowledge, even if it went much further and deeper than that of bourgeois economic science, is not enough to bring social forces under the domination of society. What is above all necessary for this, is a social *act*. And when this act has been accomplished, when society, by taking possession of all means of production and using them on a planned basis, has freed itself and all its members from the bondage in which they are now held by these means of production

which they themselves have produced but which confront them as an irresistible alien force; when therefore man no longer merely proposes, but also disposes—only then will the last alien force which is still reflected in religion vanish; and with it will also vanish the religious reflection itself, for the simple reason that then there will be nothing left to reflect.

Herr Dühring, however, cannot wait until religion dies this, its natural, death. He proceeds in more deep-rooted fashion. He out-Bismarcks Bismarck; he decrees sharper May laws not merely against catholicism, but against all religion whatsoever; he incites his gendarmes of the future against religion, and thereby helps it to martyrdom and a prolonged lease of life. Wherever we turn, we find specifically Prussian socialism.

After Herr Dühring has thus happily destroyed religion, "man, made to rely solely on himself and nature, and matured in the knowledge of his collective powers, can intrepidly enter on all the roads which the course of events and his own being open to him." Let us now consider for a change what "course of events" the man made to rely on himself can intrepidly enter on, led by Herr Dühring.

The first course of events whereby man is made to rely on himself is: being born. Then, for the period of natural minority, he remains committed to the "natural tutor of children," his mother. "This period may last, as in ancient Roman law, until puberty, that is to say, until about the fourteenth year." Only when badly brought up older boys do not pay proper respect to their mother's authority will recourse be had to paternal assistance, and particularly to the public educational regulations, to remedy this. At puberty the child becomes subject to "the natural guardianship of his father," if there is such a one "of real

and uncontested paternity"; otherwise the community appoints a guardian.

Just as Herr Dühring at an earlier point imagined that the capitalist mode of production could be replaced by the social without transforming production itself, so now he fancies that the modern-bourgeois family can be torn from its whole economic foundations without changing its entire form. To him, this form is so immutable that he even makes "ancient Roman law," though in a somewhat "ennobled" form, govern the family for all time; and he can conceive a family only as a "bequeathing," which means a possessing, unit. Here the utopians are far in advance of Herr Dühring. They considered that the socialization of youth education and, with this, real freedom in the mutual relations between members of a family, would directly follow from the free association of men and the transformation of private domestic work into a public industry. Moreover, Marx has already shown (*Capital*, Vol. I, p. 515 *et seq.*)[1] that "modern industry, by assigning as it does an important part in the process of production, outside the domestic sphere, to women, to young persons, and to children of both sexes, creates a new economic foundation for a higher form of the family and of the relations between the sexes."

"Every dreamer of social reforms," says Herr Dühring, "naturally has ready a pedagogy corresponding to his new social life." If we are to judge by this thesis, Herr Dühring is a "veritable monster" among the dreamers of social reforms. For the school of the future occupies his attention at the very least as much as his authors' rights, and this is really saying a great deal. He has his curricula for school and university all ready and complete, not only for the whole "foreseeable future"

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[1] *Capital*, Vol. I, Moscow 1954, pp. 489-90.—*Ed.*

but also for the transition period. But we will confine ourselves to what will be taught to the young people of both sexes in the final and ultimate socialitarian system.

The universal people's school will provide "everything which by itself and in principle can have any attraction for man," and therefore in particular "the foundations and main conclusions of all sciences touching on the understanding of the world and of life." In the first place, therefore, it teaches mathematics, and indeed to such effect that the field of all fundamental concepts and methods, from simple numeration and addition to the integral calculus, is "completely compassed." But this does not mean that in this school anyone will really integrate or differentiate. On the contrary. What is to be taught there will be, rather, entirely new elements of general mathematics, which contains in embryo both ordinary elementary and higher mathematics. And although Herr Dühring asserts that he already has in his mind "schematically, in their main outlines," "the contents of the text-books" which the school of the future will use, he has unfortunately not as yet succeeded in discovering these "elements of general mathematics"; and what he cannot achieve "can only really be expected from the free and enhanced forces of the new social order." But if the grapes of the mathematics of the future are still very sour, future astronomy, mechanics and physics will present all the less difficulty and will "provide the kernel of all schooling," while "the science of plants and animals, which, in spite of all theories, are mainly of a descriptive character . . ." will serve "rather as topics for light conversation." There it is, in black and white, in the *Philosophy*, page 417. Even to the present day Herr Dühring knows no other botany and zoology than those which are mainly descriptive. The whole

of organic morphology, which embraces the comparative anatomy, embryology and palaeontology of the organic world, is entirely unknown to him even by name. While in the sphere of biology totally new sciences are springing up, almost by the dozen, behind his back, his puerile spirit still goes to Raff's *Natural History for Children* for "the eminently modern educative elements provided by the natural-scientific mode of thought," and this constitution of the organic world he decrees likewise for the whole "foreseeable future." Here, too, as is his wont, he entirely forgets chemistry.

As for the aesthetic side of education, Herr Dühring will have to fashion it all anew. The poetry of the past is worthless for this purpose. Where all religion is prohibited, it goes without saying that the "mythological or other religious trimmings" characteristic of poets up to now cannot be tolerated in this school. "Poetic mysticism," too, "such as, for example, Goethe practised so extensively," is to be condemned. Herr Dühring will therefore have to make up his mind to produce for us those poetic masterpieces which "are in accord with the higher claims of an imagination reconciled with reason," and represent the genuine ideal, which "denotes the consummation of the world." Let him not tarry with it! The economic commune can start producing its world-conquering effect only when it moves along at the Alexandrine double, reconciled with reason.

The adolescent citizen of the future will not be much troubled with philology. "The dead languages will be entirely discarded ... the foreign living languages, however, ... will remain of secondary importance." Only where intercourse between nations extends to the movement of the masses of the peoples themselves would these languages be made accessible, according to needs and in an easy form. "Really educative study of language" will

be provided by a kind of general grammar, and particularly by study of the "substance and form of one's own language."

The national narrow-mindedness of modern man is still much too cosmopolitan for Herr Dühring. He wants also to do away with the two levers which in the world as it is today give at least the opportunity of rising above the narrow national standpoint: knowledge of the ancient languages, which opens a wider common horizon at least to those people of various nationalities who have had a classical education; and knowledge of modern languages, through the medium of which alone the people of different nations can make themselves understood by one another and acquaint themselves with what is happening beyond their own borders. On the contrary, the grammar of the mother tongue is to be thoroughly drilled in. "Substance and form of one's own language," however, become intelligible only when its origin and gradual evolution are traced, and this cannot be done without taking into account, first, its own extinct forms, and secondly, cognate languages, both living and dead. But this brings us back again to territory which has been expressly forbidden. If Herr Dühring strikes out of his curriculum all modern historical grammar, there is nothing left for his language studies but the old-fashioned technical grammar, cut to the old classical philological pattern, with all its casuistry and arbitrariness, based on the lack of any historical basis. His hatred of the old philology makes him elevate the very worst product of the old philology to "the central point of the really educative study of language." It is clear that we have before us a linguist who has never heard a word of the tremendous and successful development of the historical science of language which took place during the last sixty years, and who therefore seeks "the eminently modern educative

elements" of linguistics, not in Bopp, Grimm and Diez, but in Heyse and Becker of blessed memory.

But all this would still fall far short of making the young citizen of the future "rely on himself." To achieve this, it is necessary here again to lay a deeper foundation, by means of "the assimilation of the latest philosophical principles." "Such a deepening of the foundation, however, will not be ... at all a gigantic task," now that Herr Dühring has cleared the path. In fact, "if one purges of the spurious, scholastic excrescences those few strictly scientific truths of which the general schematics of being can boast, and determines to admit as valid only the reality authenticated" by Herr Dühring, elementary philosophy becomes perfectly accessible also to the youth of the future. "Recall to your mind the *extremely simple* methods by which we helped forward the concepts of infinity and their critique to a hitherto unknown import"—and then "you will not be able to see at all why the elements of the universal conception of space and time, which have been given such simple form by the deepening and sharpening now effected, should not eventually pass into the ranks of the elementary studies.... The most deep-rooted ideas" of Herr Dühring "should play no secondary role in the universal educational scheme of the new society." The self-equal state of matter and the counted uncountable are on the contrary destined "not merely to put man on his own feet but also to make him realize of himself that he *has the so-called absolute underfoot.*"

The people's school of the future, as one can see, is nothing but a somewhat "ennobled" Prussian grammar school, in which Greek and Latin are replaced by a little more pure and applied mathematics and in particular by the elements of the philosophy of reality, and the teaching of German is brought back to Becker, of blessed

memory, that is, down to about a fourth-form level. And in fact, now that we have demonstrated Herr Dühring's mere schoolboy "knowledge" in all the spheres on which he has touched, the reader will "not be able to see at all" why it, or rather, such of it as is left after our preliminary thorough "purging," should not all and sundry "eventually pass into the ranks of the elementary studies"—inasmuch as in reality it has never left these ranks. True, Herr Dühring has heard something about the combination of work and instruction in socialist society, which is to ensure an all-round technical education, as well as a practical foundation for scientific training; and this point, too, is therefore brought in, in his usual way, to help the socialitarian scheme. But because, as we have seen, the old division of labour, in its essentials, is to remain undisturbed in the Dühringian production of the future, this technical training at school is deprived of any practical application later on, or any significance for production itself; it has a purpose only within the school: it is to replace gymnastics, which our deep-rooted revolutionizer wants to ignore altogether. He can therefore offer us only a few phrases, as for example, "young and old will work, in the serious sense of the word." This spineless and meaningless ranting is really pitiful when one compares it with the passage in *Capital*, pages 508 to 515,[1] in which Marx develops the thesis that "from the Factory system budded, as Robert Owen has shown us in detail, the germ of the education of the future, an education that will, in the case of every child over a given age, combine productive labour with instruction and gymnastics, not only as one of the methods of adding to the efficiency of production, but as the only method of producing fully developed human beings."

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[1] *Capital*, Vol. I, Moscow 1954, pp. 483 to 490.—*Ed.*

We must skip the university of the future, in which the philosophy of reality will be the kernel of all knowledge, and where, alongside the Faculty of Medicine, the Faculty of Law will continue in full bloom; we must also omit the "special training institutions," about which all we learn is that they will be only "for a few subjects." Let us assume that the young citizen of the future has passed all his educational courses and has at last been "made to rely upon himself" sufficiently to be able to look about for a wife. What is the course of events which Herr Dühring offers him in this sphere?

"In view of the importance of propagation for the conservation, elimination, blending, and even new creative development of qualities, the ultimate roots of the human and unhuman must to a great extent be sought in sexual union and selection, and furthermore in the care taken for or against the ensuring of certain birth results. We must leave it practically to a later epoch to judge the brutality and stupidity now rife in this sphere. Nevertheless, we must at least make clear from the outset, even in spite of the weight of prejudice, that far more important than the number of births is surely whether nature or human circumspection succeeded or failed in regard to their quality. It is true that at all times and under all legal systems monstrosities have been destroyed; but there is a wide range of degrees between the normal human being and deformities which lack all resemblance to the human being.... It is obviously an advantage to prevent the birth of a human being who would only be a defective creature." Another passage runs: "Philosophic thought can find no difficulty ... in comprehending the right of the unborn world to the best possible composition.... Conception and, if need be, also birth offer the opportunity for preventive, or in exceptional cases selective, care in this connection." Again: "Grecian

art—the idealization of man in marble—will not be able to retain its historical importance when the less artistic, and therefore, from the standpoint of the fate of the millions, far more important task of perfecting the human form in flesh and blood is taken in hand. This form of art does not merely deal with stone, and its aesthetics is not concerned with the contemplation of dead forms"—and so on.

Our budding citizen of the future is brought to earth again. Even without Herr Dühring's help he certainly knew that marriage is not an art which merely deals with stone, or even with the contemplation of dead forms; but after all, Herr Dühring had promised him that he would be able to strike out along all roads which the course of events and his own nature opened to him, in order to discover a sympathetic female heart together with the body belonging to it. Nothing of the kind—the "deeper and stricter morality" thunders at him. The first thing that he must do is to cast off the brutality and stupidity now rife in the sphere of sexual union and selection, and bear in mind the right of the new-born world to the best possible composition. At this solemn moment it is to him a matter of perfecting the human form in flesh and blood, of becoming a Phidias, so to speak, in flesh and blood. How is he to set about it? Herr Dühring's mysterious utterances quoted above give him not the slightest indication, although Herr Dühring himself says it is an "art." Has Herr Dühring perhaps "in his mind's eye, schematically," a text-book also on this subject—of the kind of which, in sealed wrappers, German bookshops are now so full? Indeed, we are no longer in socialitarian society, but rather in the *Magic Flute*—the only difference being that Sarastro, the stout Masonic priest, would hardly rank as a "priest of the second order" in comparison with our deeper and stricter moralist. The tests to which Sarastro

put his couple of love's adepts are mere child's play compared with the terrifying examination through which Herr Dühring puts his two sovereign individuals before he permits them to enter the state of "free and ethical marriage." And so it may happen that our "made-to-be-self-reliant" Tamino of the future may indeed have the so-called absolute underfoot, but one of his feet may be a couple of rungs short of what it should be, so that evil tongues call him a club-foot. It is also within the realm of the possible that his best-beloved Pamina[1] of the future does not hold herself quite straight on the abovesaid absolute, owing to a slight deviation in the direction of her right shoulder which jealous tongues might even call a little hump. What then? Will our deeper and stricter Sarastro forbid them to practise the art of perfecting humanity in flesh and blood; will he exercise his "preventive care" at conception, or his "selective care" at birth? Ten to one, things will happen otherwise; the pair of lovers will leave Sarastro-Dühring where he stands and go off to the registry office.

Hold on there! Herr Dühring cries. This is not at all what was meant. Give me a chance to explain! In the "higher, genuinely human motives of wholesome sexual unions ... the humanly ennobled form of sexual excitement, which in its intense manifestation is *passionate love*, when reciprocated is the best guarantee of a union which will be acceptable also in its result.... It is only an effect of the second order that from a relation which in itself is harmonious a symphoniously composed product should result. From this in turn it follows that any compulsion must have harmful effects"—and so on. And thus

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[1] Sarastro, Tamino and Pamina are characters in Mozart's opera *The Magic Flute.—Ed.*

all ends the very best way in the best of all possible socialitarian worlds: club-foot and hunchback love each other passionately, and therefore in their reciprocal relation offer the best guarantee for a harmonious "effect of the second order"; it is all just like a novel—they love each other, they get each other, and all the deeper and stricter morality turns out as usual to be harmonious twaddle.

Herr Dühring's noble ideas about the female sex in general can be gathered from the following indictment of existing society: "In a society of oppression based on the sale of human being to human being, prostitution is accepted as the natural complement of compulsory marriage ties in the men's favour, and it is one of the most comprehensible but also *most significant* facts that *nothing of the kind is possible for the women.*" I would not care, for anything in the world, to have the thanks which might accrue to Herr Dühring from the women for this compliment. But has Herr Dühring really never heard of the form of income known as a petticoat-pension (*Schürzenstipendium*), which is now no longer quite an exceptional thing? Herr Dühring himself was once a referendary and he lives in Berlin, where even in my day, thirty-six years ago, to say nothing of lieutenants, *Referendarius* used often enough to rhyme with *Schürzenstipendiarius*!

* * *

May the reader permit us to take leave of our subject, which has often been dry and gloomy enough, on a note of facetiousness and reconciliation. So long as we had to deal with the separate issues raised, our judgment was bound by the objective, incontrovertible facts; and on the

basis of these facts it was often enough necessarily sharp and even hard. Now, when philosophy, economics and socialitarian system all lie behind us; when we have before us the picture of the author as a whole, which we had previously to judge in detail—now human considerations can come into the foreground; at this point we shall be permitted to trace back to personal causes many otherwise incomprehensible scientific errors and conceits, and to sum up our verdict against Herr Dühring in the words: *mental incompetence due to megalomania.*

APPENDIX

OLD PREFACE TO *ANTI-DÜHRING* ON DIALECTICS[1]

The following work does not by any means owe its origin to an "inner urge." On the contrary, my friend Liebknecht can testify to the great effort it cost him to persuade me to turn the light of criticism on Herr Dühring's newest socialist theory. Once I made up my mind to do so I had no choice but to investigate this theory, which claims to be the latest practical fruit of a new philosophical system, in its connection with this system, and thus to examine the system itself. I was therefore compelled to follow Herr Dühring into that vast domain in which he speaks of all possible things and of some others as well. That was the origin of a series of articles which appeared in the Leipzig *Vorwärts* from the beginning of 1877 onwards and are here presented as a connected whole.

When, because of the nature of the subject, the critique of a system, so extremely insignificant despite all self-praise, is presented in such great detail, two circumstances may be cited in excuse. On the one hand this criticism afforded me the opportunity of setting forth in positive form in various fields my outlook on controversial issues that today are of quite general scientific

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[1] This article was written approximately in May 1878 as a preface to the first edition of *Anti-Dühring*, but was replaced by another preface and afterwards assigned by Engels to the materials on the *Dialectics of Nature*.—*Ed.*

or practical interest. And while it does not occur to me in the least to present another system as an alternative to Herr Dühring's, it is to be hoped that, notwithstanding the variety of material examined by me, the reader will not fail to observe the interconnection inherent also in the views which I have advanced.

On the other hand the "system-creating" Herr Dühring is by no means an isolated phenomenon in contemporary Germany. For some time now in that country philosophical, especially natural-philosophical, systems, have been springing up by the dozen overnight, like mushrooms, not to mention the countless new systems of politics, economics, etc. Just as in the modern state it is presumed that every citizen is competent to pass judgment on all the issues on which he is called to vote; and just as in economics it is assumed that every buyer is a connoisseur of all the commodities which he has occasion to purchase for his maintenance—so similar assumptions are now to be made in science. Everybody can write about everything and "freedom of science" consists precisely in people deliberately writing about things they have not studied and putting this forward as the only strictly scientific method. Herr Dühring, however, is one of the most characteristic types of this bumptious pseudo-science which in Germany nowadays is forcing its way to the front everywhere and is drowning everything with its resounding—sublime nonsense. Sublime nonsense in poetry, in philosophy, in economics, in historiography; sublime nonsense in the lecture-room and on the platform, sublime nonsense everywhere; sublime nonsense which lays claim to a superiority and depth of thought distinguishing it from the simple, commonplace nonsense of other nations; sublime nonsense, the most characteristic mass product of Germany's intellectual industry—cheap but bad—just like other German-made goods, only

that unfortunately it was not exhibited along with them at Philadelphia. Even German socialism has lately, particularly since Herr Dühring's good example, gone in for a considerable amount of sublime nonsense; the fact that the practical Social-Democratic movement so little allows itself to be led astray by this sublime nonsense is one more proof of the remarkably healthy condition of our working class in a country where otherwise, with the exception of natural science, at the present moment almost everything goes ill.

When Nägeli, in his speech at the Munich meeting of natural scientists,[1] voiced the idea that human knowledge would never acquire the character of omniscience, he must obviously have been ignorant of Herr Dühring's achievements. These achievements have compelled me to follow him into a number of spheres in which I can move at best only in the capacity of a dilettante. This applies particularly to the various branches of natural science, where hitherto it was frequently considered more than presumptuous for a "layman" to want to have any say. I am encouraged somewhat, however, by a dictum uttered, likewise in Munich, by Herr Virchow[2] and elsewhere discussed more in detail, that outside of his own speciality every natural scientist is only a semi-initiate, *vulgo*: layman. Just as such a specialist may and must take the liberty of encroaching from time to time on neighbouring fields, and is granted indulgence there by the specialists concerned in respect of minor inexactitudes and clumsiness of expression, so I have taken the liberty of citing natural processes and laws of nature as examples in proof of my general theoretical views, and

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[1] Held in September 1877.—*Ed.*

[2] Virchow's paper, "Freedom of Science in the Modern State," was published in pamphlet form in Berlin in 1877.—*Ed.*

I hope that I can count on the same indulgence. The results obtained by modern natural science force themselves upon everyone who is occupied with theoretical matters with the same irresistibility with which the natural scientist today is willy-nilly driven to general theoretical conclusions. And here a certain compensation occurs. If theoreticians are semi-initiates in the sphere of natural science, then natural scientists today are actually just as much so in the sphere of theory, in the sphere of what hitherto was called philosophy.

Empirical natural science has accumulated such a tremendous mass of positive material for knowledge that the necessity of classifying it in each separate field of investigation systematically and in accordance with its inner interconnection has become absolutely imperative. It is becoming equally imperative to bring the individual spheres of knowledge into the correct connection with one another. In doing so, however, natural science enters the field of theory and here the methods of empiricism will not work, here only theoretical thinking can be of assistance. But theoretical thinking is an innate quality only as regards natural capacity. This natural capacity must be developed, improved, and for its improvement there is as yet no other means than the study of previous philosophy.

In every epoch, and therefore also in ours, theoretical thought is a historical product, which at different times assumes very different forms and, therewith, very different contents. The science of thought is therefore, like every other, a historical science, the science of the historical development of human thought. And this is of importance also for the practical application of thought in empirical fields. Because in the first place the theory of the laws of thought is by no means an "eternal truth" established once and for all, as philistine reason-

ing imagines to be the case with the word "logic." Formal logic itself has been the arena of violent controversy from the time of Aristotle to the present day. And dialectics has so far been fairly closely investigated by only two thinkers, Aristotle and Hegel. But it is precisely dialectics that constitutes the most important form of thinking for present-day natural science, for it alone offers the analogue for, and thereby the method of explaining, the evolutionary processes occurring in nature, interconnections in general, and transitions from one field of investigation to another.

Secondly, an acquaintance with the historical course of evolution of human thought, with the views on the general interconnections in the external world expressed at various times, is required by theoretical natural science for the additional reason that it furnishes a criterion of the theories propounded by this science itself. Here, however, lack of acquaintance with the history of philosophy is fairly frequently and glaringly displayed. Propositions which were advanced in philosophy centuries ago, which often enough have long been disposed of philosophically, are frequently put forward by theorizing natural scientists as brand new wisdom and even become fashionable for a while. It is certainly a great achievement of the mechanical theory of heat that it strengthened the principle of the conservation of energy by means of fresh proofs and put it once more in the forefront; but could this principle have appeared on the scene as something so absolutely new if the worthy physicists had remembered that it had already been formulated by Descartes? Since physics and chemistry once more operate almost exclusively with molecules and atoms, the atomic philosophy of ancient Greece has of necessity come to the fore again. But how superficially it is treated by the best of them! Thus

Kekulé tells us (*Ziele und Leistungen der Chemie*)[1] that Democritus, instead of Leucippus, originated it, and he maintains that Dalton was the first to assume the existence of qualitatively different elementary atoms and was the first to ascribe to them different weights characteristic of the different elements. Yet anyone can read in Diogenes Laertius (X, 1, §§ 43-44 and 61) that already Epicurus had ascribed to atoms differences not only of magnitude and form but also of *weight*, that is, he was already acquainted in his own way with atomic weight and atomic volume.

The year 1848, which otherwise brought nothing to a conclusion in Germany, accomplished a complete revolution there only in the sphere of philosophy. By throwing itself into the field of the practical, here setting up the beginnings of modern industry and swindling, there initiating the mighty advance which natural science has since experienced in Germany and which was inaugurated by the caricature-like itinerant preachers Vogt, Büchner, etc., the nation resolutely turned its back on classical German philosophy that had lost itself in the sands of Berlin old Hegelianism. Berlin old Hegelianism had richly deserved that. But a nation that wants to climb the pinnacles of science cannot possibly manage without theoretical thought. Not only Hegelianism but dialectics too was thrown overboard—and that just at the moment when the dialectical character of natural processes irresistibly forced itself upon the mind, when therefore only dialectics could be of assistance to natural science in negotiating the mountain of theory—and so there was a helpless relapse into the old metaphysics. What prevailed among the public since then were, on the one hand, the vapid reflections of Schopenhauer, which were fash-

[1] Engels refers to Kekulé's pamphlet *Aims and Achievements of Chemistry*, which appeared in Bonn in 1878.—*Ed.*

ioned to fit the philistines, and later even those of Hartmann; and, on the other hand, the vulgar itinerant-preacher materialism of a Vogt and a Büchner. At the universities the most diverse varieties of eclecticism competed with one another and had only one thing in common, namely, that they were concocted from nothing but remnants of old philosophies and were all equally metaphysical. All that was saved from the remnants of classical philosophy was a certain neo-Kantianism, whose last word was the eternally unknowable thing-in-itself, that is, the bit of Kant that least merited preservation. The final result was the incoherence and confusion of theoretical thought now prevalent.

One can scarcely pick up a theoretical book on natural science without getting the impression that natural scientists themselves feel how much they are dominated by this incoherence and confusion, and that the so-called philosophy now current offers them absolutely no way out. And here there really is no other way out, no possibility of achieving clarity, than by a return, in one form or another, from metaphysical to dialectical thinking.

This return can take place in various ways. It can come about spontaneously, by the sheer force of the natural scientific discoveries themselves, which refuse any longer to allow themselves to be forced into the old Procrustean bed of metaphysics. But that is a protracted, laborious process during which a tremendous amount of unnecessary friction has to be overcome. To a large extent that process is already going on, particularly in biology. It could be greatly shortened if the theoreticians in the field of natural science were to acquaint themselves more closely with dialectical philosophy in its historically existing forms. Among these forms there are two which may prove especially fruitful for modern natural science.

The first of these is Greek philosophy. Here dialectical thought still appears in its pristine simplicity, still undisturbed by the enchanting obstacles which the metaphysics of the seventeenth and eighteenth centuries—Bacon and Locke in England, Wolff in Germany—put in its own way, and with which it blocked its own progress, from an understanding of the part to an understanding of the whole, to an insight into the general interconnection of things. Among the Greeks—just because they were not yet advanced enough to dissect, analyze nature—nature is still viewed as a whole, in general. The universal connection of natural phenomena is not proved in regard to particulars; to the Greeks it is the result of direct contemplation. Herein lies the inadequacy of Greek philosophy, on account of which it had to yield later to other modes of outlook on the world. But herein also lies its superiority over all its subsequent metaphysical opponents. If in regard to the Greeks metaphysics was right in particulars, in regard to metaphysics the Greeks were right in general. That is the first reason why we are compelled in philosophy as in so many other spheres to return again and again to the achievements of that small people whose universal talents and activity assured it a place in the history of human development that no other people can ever claim. The other reason, however, is that the manifold forms of Greek philosophy contain in embryo, in the nascent state, almost all later modes of outlook on the world. Theoretical natural science is therefore likewise forced to go back to the Greeks if it desires to trace the history of the origin and development of the general principles it holds today. And this insight is forcing its way more and more to the fore. Instances are becoming increasingly rare of natural scientists who, while themselves operating with fragments of Greek philosophy, for example atomics, as with

eternal truths, look down upon the Greeks with Baconian superciliousness because the Greeks had no empirical natural science. It would be desirable only for this insight to advance to a real familiarity with Greek philosophy.

The second form of dialectics, which is the one that comes closest to the German naturalists, is classical German philosophy, from Kant to Hegel. Here a start has already been made in that it has again become fashionable to return to Kant, even apart from the neo-Kantianism mentioned above. Since the discovery that Kant was the author of two brilliant hypotheses, without which theoretical natural science today simply cannot make progress—the theory, formerly credited to Laplace, of the origin of the solar system and the theory of the retardation of the earth's rotation by the tides—Kant is again held in honour among natural scientists, as he deserves to be. But to study dialectics in the works of Kant would be a uselessly laborious and little remunerative task, as there is now available, in *Hegel's* works, a comprehensive compendium of dialectics, developed though it be from an utterly erroneous point of departure.

After, on the one hand, the reaction against "natural philosophy" had run its course and had degenerated into mere abuse—a reaction that was largely justified by this erroneous point of departure and the helpless degeneration of Berlin Hegelianism; and after, on the other hand, natural science had been so conspicuously left in the lurch by current eclectic metaphysics in regard to its theoretical requirements, it will perhaps be possible to pronounce once more the name of Hegel in the presence of natural scientists without provoking that St. Vitus's dance which Herr Dühring so entertainingly performs.

First of all it must be established that here it is not at all a question of defending Hegel's point of departure:

that spirit, mind, the idea, is primary and that the real world is only a copy of the idea. Already Feuerbach abandoned that. We all agree that in every field of science, in natural as in historical science, one must proceed from the given *facts*, in natural science therefore from the various material forms and the various forms of motion of matter[1]; that therefore in theoretical natural science too the interconnections are not to be built into the facts but to be discovered in them, and when discovered to be verified as far as possible by experiment.

Just as little can it be a question of maintaining the dogmatic content of the Hegelian system as it was preached by the Berlin Hegelians of the older and younger line. Hence, with the fall of the idealist point of departure, the system built upon it, in particular Hegelian natural philosophy, also falls. It must however be recalled that the natural scientists' polemic against Hegel, in so far as they at all correctly understood him, was directed solely against these two points: viz., the idealist point of departure and the arbitrary, fact-defying construction of the system.

After allowance has been made for all this there still remains Hegelian dialectics. It is the merit of Marx that, in contrast to the "peevish, arrogant, mediocre Ἐπίγονοι who now talk large in cultured Germany,"[2] he was the first to have brought to the fore again the forgotten dialectical method, its connection with Hegelian dialectics and its distinction from the latter, and at the same time to have applied this method in *Capital* to the facts of an empirical science, political economy. And he did it so suc-

[1] The text as originally worded had a full stop here. Then followed this incomplete sentence, which Engels later deleted: "We socialist materialists go even considerably further in this respect than the natural scientists by also. . . ."—*Ed.*

[2] *Capital*, Vol. I, Moscow 1954, p. 19.—*Ed.*

cessfully that even in Germany the newer economic school rises above the vulgar free-trade system only by copying from Marx (often enough incorrectly), on pretence of criticizing him.

In Hegel's dialectics there prevails the same inversion of all real interconnection as in all other ramifications of his system. But, as Marx says: "The mystification which dialectic suffers in Hegel's hands, by no means prevents him from being the first to present its general form of working in a comprehensive and conscious manner. With him it is standing on its head. It must be turned right side up again, if you would discover the rational kernel within the mystical shell."[1]

In natural science itself, however, we often enough encounter theories in which the real relation is stood on its head, the reflection is taken for the original form and which consequently need to be turned right side up again. Such theories quite often dominate for a considerable time. When for almost two centuries heat was considered a special mysterious substance instead of a form of motion of ordinary matter, that was precisely such a case and the mechanical theory of heat carried out the inverting. Nevertheless physics dominated by the caloric theory discovered a series of highly important laws of heat and cleared the way, particularly through Fourier[2] and Sadi Carnot, for the correct conception, which now for its part had to put right side up the laws discovered by its predecessor, to translate them into its own language.[3]

[1] *Ibid.*, p. 20.—*Ed.*

[2] Engels refers to the mathematician *Jean Baptiste Joseph Fourier*, author of the treatise *Analytical Theory of Heat* (*Théorie analytique de la chaleur*, Paris 1822).—*Ed.*

[3] Carnot's function C literally inverted: $\frac{1}{C}$ = absolute temperature. Without this inversion nothing can be done with it. [*Note by Engels.*]

Similarly, in chemistry the phlogistic theory first supplied the material, by a hundred years of experimental work, with the aid of which Lavoisier was able to discover in the oxygen obtained by Priestley the real antipode of the fantastic phlogiston and thus could throw overboard the entire phlogistic theory. But this did not in the least do away with the experimental results of phlogistics. On the contrary. They persisted, only their formulation was inverted, was translated from the phlogistic into the now valid chemical language and thus they retained their validity.

The relation of Hegelian dialectics to rational dialectics is the same as that of the caloric theory to the mechanical theory of heat and that of the phlogistic theory to the theory of Lavoisier.

FROM ENGELS'S PREPARATORY WRITINGS FOR *ANTI-DÜHRING*[1]

PART I

Ch. III

[*Ideas—Reflections of Reality*]

All ideas are taken from experience, are reflections—true or distorted—of reality.

Ch. III, pp. 53-55

[*Material World and Laws of Thought*]

Two kinds of experience—external, material, and internal—laws of thought and forms of thought. Forms of thought also partly inherited by development (self-evidence, for instance, of mathematical axioms for Europeans, certainly not for Bushmen and Australian Negroes).

If our premises are correct and we apply the laws of thought correctly to them, the result must tally with reality, just as a calculation in analytical geometry must tally with the geometrical construction, although the two are entirely different methods. Unfortunately, however, this is

[1] The chapter and page references at the head of each excerpt "From Engels's Preparatory Writings for *Anti-Dühring*," as well as the bracketed headings for these excerpts, have been provided by the editor.—*Ed.*

almost never the case, and if so, only in very simple operations.

The external world, in its turn, is either nature or society.

Ch. III, pp. 53-56; Ch. IV, pp. 62-66; and Ch. X, pp. 134-135

[*Relation of Thinking and Being*]

The sole content of thinking is the world and the laws of thought.

The general results of the investigation of the world are obtained at the end of this investigation, hence are not *principles,* points of departure, but *results*, conclusions. To construct the latter in one's head, take them as the basis from which to start, and then reconstruct the world from them in one's head is *ideology*, an ideology which tainted every species of materialism hitherto existing; because while in *nature* the relation of thinking to being was certainly to some extent clear to materialism, in history it was not, nor did materialism realize the dependence of all thought upon the historical material conditions obtaining at the particular time.

As Dühring proceeds from "principles" instead of facts he is an ideologist, and can screen his being one only by formulating his propositions in such general and vacuous terms that they appear *axiomatic*, *flat.* Moreover, nothing can be concluded from them; one can only read something *into* them. Thus, for instance, the principle of *sole being.* The unity of the world and the nonsense of a hereafter are a result of the whole investigation of the world but are here to be proved *a priori*, proceeding from an *axiom of thought.* Hence bosh.

But without this turning around philosophy is impossible apart.

Ch. III, pp. 56-57

[*The World as a Coherent Whole. Knowledge of the World*]

Systematics[1] impossible after Hegel. The world clearly constitutes a single system, i.e., a coherent whole, but the knowledge of this system presupposes a knowledge of *all* nature and history, which man will *never* attain. Hence he who makes systems must fill in the countless gaps with *figments of his own imagination*, i.e., engage in *irrational* fancies, ideologize.

Rational fantasy—*alias* combination!

Ch. III, pp. 57-61

[*Mathematical Operations and Purely Logical Operations*]

Calculative reason—*calculating machine*!—Curious confusion of mathematical operations, which are capable of material demonstration, of proof because they are based on direct, even if abstract, material contemplation, with *purely* logical ones, which are capable only of proof by deduction, hence are incapable of the positive certainty possessed by mathematical operations—and how many of them wrong! Machine for *integration*; cf. Andrew's speech, *Nature*, Sept. 7, 76.[2]

Scheme=stereotype.

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[1] *Systematics*: Here in the sense of building up an absolutely completed system.—*Ed.*

[2] *Andrew's speech, Nature*, September 7, 1876: Reference by Engels to a speech of Thomas Andrew delivered at the forty-sixth annual meeting of the British Association for the Advancement of Science, in Belfast.—*Ed.*

Ch. III, pp. 57-61; Ch. IV, pp. 62-66

[*Reality and Abstraction*]

It is just as impossible for Dühring to prove the exclusive *materiality* of all being with the aid of the proposition of the oneness of all-embracing being, which the Pope and the Sheikh-ul-Islam can subscribe to without detracting from their infallibility and religion, as it is impossible for him to construct a triangle or a sphere or derive the Pythagorean theorem from any mathematical axiom. Both require real prerequisite conditions and it is only upon an investigation of these that the above results are arrived at. The certainty that no spiritual world exists separately, besides the material world, is the result of a long and wearisome investigation of the real world, inclusive of the products and processes of the human brain. The results of geometry are nothing but the natural properties of the various lines, planes and solids or their combinations, which for the most part occurred in nature long before man existed (radiolaria, insects, crystals, etc.).

Ch. VI, p. 87 et seqq.

[*Motion as the Mode of Existence of Matter*]

Motion is the mode of existence of matter, hence more than a mere property of it. There is no matter without motion, nor could there ever have been. Motion in cosmic space, mechanical motion of smaller masses on a single celestial body, the vibration of molecules as heat, electric tension, magnetic polarization, chemical decomposition and combination, organic life up to its highest product, thought—at each given moment each individual atom of matter is in one or other of these forms of mo-

tion. All equilibrium is either only relative rest or even motion in equilibrium, like that of the planets. Absolute rest is only conceivable in the absence of matter. Neither motion as such nor any of its forms, such as mechanical force, can therefore be separated from matter nor opposed to it as something apart or alien, without leading to an absurdity.

Ch. VII, pp. 99-102

[*Natural Selection*]

Dühring ought to rejoice over natural selection, as it furnishes the best illustration of his theory of conscious end and means.

Whereas Darwin inquires into the *form*, natural selection, in which a slow alteration takes place, Dühring demands that Darwin should also name the *cause* of the alteration, of which Herr Dühring likewise knows nothing. No matter what progress science has made, Herr Dühring will always declare that something is still lacking and so will have ample grounds for grumbling.

Ch. VII

[*On Darwin*]

How great is the stature of the thoroughly modest Darwin, who not only collects, arranges and elaborates thousands of facts from the whole of biology but takes delight in quoting any predecessor, however insignificant, even to the diminution of his own glory, in comparison with that braggadocio Dühring, who while contributing nothing of value himself is over-exacting of others, and who....

Ch. VII, pp. 101-102; Ch. VIII, pp. 111-113

Dühringiana. Darwinism, p. 115[1].

Adaptation of plants is a combination of physical forces or chemical agents; hence, no adaptation. If, "in growing, a plant takes the path along which it will receive most light," it does so in various ways and by various means, which differ according to its species and peculiarities. The physical forces and chemical agents, however, act differently here in each plant and help the plant, which after all is something other than these "chemical and physical, etc.," to get the light it needs in the way that has become peculiar to it by lengthy precedent evolution. Indeed, this light acts as a stimulus on the plant cells and sets in motion within them, as a response, precisely those forces and agents.[2] Since this process goes on in an organic cellular structure and assumes the form of stimulation and response, which occurs here just as it does in transmission by nerves in the human brain, the identical expression, adaptation, fits in both cases. And if adaptation is to be accomplished absolutely through the medium of consciousness, where do consciousness and adaptation begin and where do they end? With the moneron, with the insect-eating plant, with the sponge, with the coral, with the first nerve? Dühring would do a very great favour to natural scientists of the old stripe if he should draw this boundary line. Protoplasm stimulation and protoplasm response are to be found wherever there is living protoplasm. And since the influence of slowly changing stimuli calls forth change in the protoplasm too, otherwise it would perish, the same expression, adaptation, *must* be applied to all organic bodies.

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[1] The pages given refer to Dühring's *Course of Philosophy.—Ed.*

[2] Here there is a marginal note which reads: "And among animals, too, spontaneous adaptation is most important."—*Ed.*

Ch. VII, p. 101 et seqq.

[*Adaptation and Heredity*]

With regard to the evolution of the species, Haeckel perceives adaptation as negative, or altering; heredity as positive, or preserving. Dühring on the contrary states (p. 122) that heredity also has negative results, produces *alterations*. (Besides, nice trash about preformation.) Now nothing is easier than to turn such opposites, like all other opposites of this kind, around and prove that adaptation, precisely by altering the *form*, preserves the essence, the *organ itself*, while heredity, by the fact alone of the mixture of two individuals different each time, constantly brings about changes the accumulation of which does not exclude a change in species. As a matter of fact, the results of adaptation are also inherited! But this does not get us one step further. We must take the *facts of the case* as they are and investigate them, and then we shall of course find that Haeckel is quite right in considering heredity essentially the conservative, positive side of the process and adaptation, its revolutionizing, negative side. Domestication and breeding as well as spontaneous adaptation speak louder here than all of Dühring's subtle conceptions."

Ch. VIII, pp. 114-118

Dühring, p. 141.

Life. That exchange of matter, metabolism, is the most important phenomenon of life has been asserted innumerable times during the last twenty years by physiological chemists and chemical physiologists and is here repeatedly extolled as the definition of life. But neither an exact nor an exhaustive one. Exchange of matter is encountered also in the *absence* of life, e.g., in simple

chemical processes which, given an adequate supply of raw material, constantly reproduce their own conditions, a definite body being the carrier of the process (examples see Roscoe, 102,[1] manufacture of sulphuric acid), in endosmose and exosmose (through dead organic and even inorganic membranes?), in Traube's artificial cells and their medium. Metabolism, supposed to constitute life, itself requires more exact defining. Thus, despite all deeper foundations, subtle conceptions and closer investigations, we have not yet got to the bottom of this thing and still ask what life is.

To science definitions are worthless because always inadequate. The only real definition is the development of the thing itself, but this is no longer a definition. To know and show what life is we must examine all forms of life and present them in their interconnection. On the other hand, *for ordinary purposes*, a brief exposition of the commonest and at the same time most significant features of a so-called definition is often useful and even necessary, and can do no harm if no more is expected of it than it can convey. Let us therefore attempt to give such a definition of life, an attempt in which so many people have racked their brains in vain (see Nicholson).

Life is the mode of existence of albuminous bodies and this mode of existence essentially consists in the constant renewal of their chemical constituents by nutrition and excretion.

. . . Then, from the organic exchange of matter as the essential function of albumen and from its peculiar plasticity, are derived all the other most simple functions

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[1] *Roscoe und Schorlemmer*, Ausführliches Lehrbuch der Chemie, B. I [A Detailed Textbook on Chemistry, Vol. I], Braunschweig 1877.—*Ed.*

of life—irritability, which is already included in the mutual interaction between nutrition and albumen; contractibility in the consumption of food; possibility of growth, which at the lowest stage (moneron) includes propagation by fission; internal movement, without which neither swallowing nor assimilation of food is possible. But how the advance from simple plastic albumen to the cell and thus to the organism is accomplished must first be learnt from observation, but such an inquiry is no part of a simple practical definition of life. (On p. 141 Dühring mentions besides a whole intermediate world, inasmuch as there is no real life without a system of circulation canals and a "germ scheme." A superb passage.)

Ch. X, pp. 135-142

[*Dühring—Economics.—The Two Men*]

As long as morality is the point at issue Dühring can set them down as equal, but as soon as economics comes under discussion that ceases to be so. If, for example, the two men are a yankee broken in to all trades and a Berlin student who brings along nothing but his graduation certificate and the philosophy of reality, and in addition arms that on principle have never been strengthened by fencing, where does equality come in? The yankee produces everything, the student only helps here and there, but distribution takes place according to the contribution of each; soon the yankee will have the means capitalistically to exploit any eventual increase in the population of the colony (births or immigration). The whole modern order, capitalist production and all that, can therefore be brought into being by the two men without either of them needing a sabre.

Ch. X, pp. 144-149

Dühringiana.

Equality—Justice.—The idea that equality is the expression of justice, the principle of consummated political and social regulation, arose quite historically. It did not exist in primitive communities, or only very limitedly so, for full members of individual communities, and was saddled with slavery. Ditto in the democracy of antiquity. Equality of all people—Greeks, Romans and barbarians, freemen and slaves, subjects and aliens, citizens and peregrines, etc.—was not only insane but criminal to the mind of the ancients, and in Christendom its first beginnings were strictly persecuted.

In Catholicism there was first the *negative equality of all human beings before God as sinners*, and, more narrowly construed, the equality of all children of God redeemed by the grace and the blood of Christ. Both versions are grounded in the role of Christianity as the religion of the slaves, the banished, the dispossessed, the persecuted, the oppressed. With the victory of Christianity this circumstance was relegated to the rear and prime importance attached next to the antithesis between believers and pagans, orthodox and heretics.

With the rise of the cities and thereby of the more or less developed elements of the bourgeoisie, as well as of the proletariat, the demand for equality as a condition of bourgeois existence was bound gradually to resurge, interlinked with the proletariat's drawing of the conclusion to proceed from political to social equality. This naturally assumed a religious form, sharply expressed for the first time in the Peasant War.

The bourgeois side was first formulated by Rousseau, in trenchant terms but still on behalf of all humanity.

As was the case with all demands of the bourgeoisie, so here too the proletariat cast a fateful shadow beside it and drew its own conclusions (Babeuf). This connection between bourgeois equality and the proletariat's drawing of conclusions should be developed in greater detail.

So it took almost all of past history to elaborate the principle of equality=justice, and this success was achieved only when a bourgeoisie and a proletariat had come into existence. The principle of equality signifies, however, that there must be no *privileges*, hence is essentially *negative*, pronounces all past history wretched. Because of its lack of positive content and its offhand rejection of the entire past it is just as suitable for proclamation by a great revolution, 89-96, as for the later blockheads engaged in manufacturing systems. But to represent equality=justice as the highest principle and ultimate truth is absurd. Equality exists only in opposition to inequality, justice—in opposition to injustice; hence they are still saddled with the opposition to old, past history, and hence to old society itself.[1]

This suffices to bar them from constituting *eternal* justice and truth. A few generations of social development under a communist regime and increased quantities of means of subsistence must bring mankind to a stage where this boasting about equality and right appears as ridiculous as boasting of privileges of nobility and birth appear today, where the opposition to the old inequality and to the old positive law and even to the new, transitional law disappears from practical life, where anyone who pedantically insists on being given his equal and just share of the products is laughed to scorn by being

[1] Here the MS bears the following marginal notation: "The idea of equality [follows] from the equality of general human labour in commodity production. *Capital*, p. 36." See *Capital*, Vol. I, Moscow 1954, pp. 59-60.—*Ed.*

given twice as much. Even Dühring will find this to be "foreseeable," and where else will there be room then for equality and justice if not in the lumber-room of historical reminiscences? The fact that such phrases make excellent propaganda material today will not turn it into an eternal truth by a long shot.

(The *content* of equality must be elucidated.—Restriction to rights, etc.)

Moreover, an abstract equality theory is still an absurdity today and will remain such for a considerable length of time. It would never occur to a socialist proletarian or theoretician to recognize the abstract equality between himself and a Bushman or Tierra del Fuegan, or even a *peasant* or semi-feudal agricultural day-labourer; and as soon as this has been overcome, even if only in Europe, the standpoint of abstract equality will also be overcome. With the introduction of rational equality that equality loses all meaning. If equality is now demanded, this is so in anticipation of the intellectual and moral *equalization* which thus *under present historical conditions* follows of itself. *Eternal* morality must have been possible at all times and must *everywhere* be possible. But even Dühring does not maintain this in regard to equality; on the contrary, he allows for a provisional period of repression, hence admits that equality is not an eternal truth but a historical product and attribute of definite historical conditions.

The equality of the bourgeoisie (abolition of class *privileges*) is very different from that of the proletariat (abolition of the classes themselves). If driven further than the latter, i.e., if conceived abstractly, equality becomes an absurdity. And so Herr Dühring is finally compelled to re-introduce, by a back-door, both armed as well as administrative, judicial and police force.

Thus the *idea of equality* is *itself a historical product*

and its elaboration required the whole of preceding history; hence it did not exist from all eternity as a truth. The fact that now most people take it for granted—in principle—is not due to its being axiomatic but to the *spread of the ideas of the eighteenth century.* And, therefore, if the two famous men today take their stand on the principle of equality, that is to be explained by their being presented as "eddicated" people of the nineteenth century and its being "natural" with them. How *real* people behave and did behave depends and always did depend on the historical conditions under which they lived.

Ch. IX, pp. 130-133; Ch. X, pp. 144-149
[*Dependence of Ideas on Social Relations*]

The notion that *the ideas and conceptions of people* create *their conditions of life* and not the other way round is contradicted by all past history, in which results constantly differed from what had been desired and in the further course of events were in most cases even the opposite. Only in the more or less distant future can this notion become a reality in so far as men will understand in advance the necessity of changing the social system [Verfassung] (*sit venia verbo*[1]), on account of changing conditions, and will desire the change before it forces itself upon them without their being conscious of it or desiring it.

The same is true of the conceptions of *law*, hence of politics (as far as that goes, this point is to be dealt with under "Philosophy," while "force" is reserved for economics).

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[1] If one may be permitted to use this word.—*Ed.*

Ch. XI, pp. 158-160 (cf. also Part III, Ch. V, pp. 438-440)

Even the correct reflection of *nature* is extremely difficult, the product of a long history of experience. To primitive man the forces of nature were something alien, mysterious, superior. At a certain stage, through which *all* civilized peoples passed, he assimilates them by means of personification. It was this urge to personify that created gods everywhere, and the *consensus gentium*,[1] as regards proof of the existence of God, proves after all only the universality of this urge to personify as a necessary transition stage, and consequently the universality of religion too. Only real knowledge of the forces of nature ejects the gods or God from one position after another (Secchi and his solar system). This process has now advanced so far that theoretically it may be considered concluded.

In the sphere of *society* reflection is still more difficult. Society is determined by economic relations, production and exchange, and besides by the historically prerequisite conditions.

Ch. XII, pp. 166-169 (Cf. "General," pp. 34-37)

Antithesis—if a thing is saddled with its antithesis it is in *contradiction* with itself, and so is its expression in thought. For example, there is a *contradiction* in a thing remaining the same and yet constantly changing, being possessed of the antithesis of "inertness" and "change."

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[1] Consensus of the peoples.—*Ed.*

Ch. XIII

[*Negation of the Negation*]

... All Indo-Germanic peoples began with *common* property. Among almost all of them it was abolished, *negated*, in the course of social development, extruded by other forms—private property, feudal property, etc. To negate this negation, to restore common property on a higher plane of development, is the task of the social revolution. Or: the philosophy of antiquity was originally spontaneous materialism. The latter gave rise to idealism, spiritualism, negation of materialism, first in the shape of the antithesis of soul and body, then in the doctrine of immortality and in monotheism. This spiritualism was universally disseminated through the medium of Christianity. The negation of this negation is the reproduction of the old on a higher plane, modern materialism, which, in contrast with the past, finds its theoretical conclusion in scientific socialism....

It goes without saying that these natural and historical processes have their reflection in the thinking brain and reproduce themselves in it, as is seen in the above examples:—a $\times$—a, etc.; and it is just the paramount dialectical problems that are solved by this method alone.

But there is also a bad, barren negation.

True, natural, historical and dialectical negation (taken formally) is precisely what constitutes the driving principle of all development—the splitting into antitheses, their struggle and resolution. At the same time, on the basis of the experience gained, the original point of departure is again arrived at (in history partly, in thought wholly) but on a higher plane.

A barren negation is a purely subjective, individual

one. Not being a stage of development of the thing itself, it is an *opinion* introduced from without. And as nothing can result from it, the negator must be at loggerheads with the world, sullenly finding fault with everything that exists or ever happened, with the whole historical development. True, the Greeks of antiquity accomplished a few things, but they knew nothing of spectral analysis, chemistry, differential calculus, steam-engines, chaussées, the electric telegraph or the railway. Why dwell at length on the products of people of such minor importance? Everything is bad—so far this sort of negator is a pessimist—save our own exalted selves, who are perfect, and thus our pessimism resolves itself into optimism. And thus we ourselves have perpetrated a negation of the negation!

Even Rousseau's way of looking at history—original equality, deterioration through inequality, restoration of equality on a higher plane—is a negation of the negation.[1]

Dühring constantly preaches idealism—*ideal* conception, etc. If we draw conclusions about the future from existing relations, if we perceive and investigate the *positive* side of the *negative* elements operative in the course of history—and even the most narrow-minded progressive, the idealist Lasker, does that, in his own way—Dühring calls it "idealism" and deduces from it the right to design a plan for the future that provides even the curricula for schools, a plan that, however, is fantastic because based on ignorance. And he overlooks the fact that in doing so he, too, is committing a *negation of the negation.*

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[1] This remark appears in the margin of the MS.—*Ed.*

Ch. XIII, pp. 190-191

Negation of the Negation and Contradiction. The "nothing" of a positive is a definite nothing, says Hegel. "Differentials can be considered and treated as *real zeros*, which stand in a relation to one another that is determined by the state of the question under discussion." Bossut continues that mathematically this is *not nonsense*; that $\frac{0}{0}$ may represent a very definite value if obtained by the simultaneous disappearance of the numerator and the denominator. Ditto $O : O = A : B$, where $\frac{0}{0} = \frac{A}{B}$, consequently changes with a change in the value of A or B (p. 95, examples). And is it not a "contradiction" that zeros form ratios, i.e., can have not only value in general but even various values which are expressible in figures? $1 : 2 = 1 : 2$; $1—1 : 2—2 = 1 : 2$; $0 : 0 = 1 : 2$.

Dühring himself says that those summations of infinitely small magnitudes are the highest, etc., of mathematics, in plain words, integral calculus. And how is this done? I have two, three or more variable quantities, i.e., such as maintain a definite relation among themselves when changing—say, two quantities, x and y, and am to solve a definite problem which is not solvable by ordinary mathematics and in which x and y function. I differentiate x and y, i.e., I take x and y as so infinitely small that in comparison with any real quantity, however small, they disappear—that nothing is left of x and y but *their reciprocal relation*, without any material basis; consequently $\frac{dx}{dy} = \frac{0}{0}$, but $\frac{0}{0}$ expressed in the ratio $\frac{x}{y}$. That this ratio between two quantities which have disappeared, the fixed moment of their disappearance, is a contradiction cannot disturb us. And now, what have I

done but *negate* x and y, though not in such a way that I need not bother about them any more, but in the way that corresponds with the facts of the case? In place of x and y I have their negation, dx and dy, in the formulas or equations before me. I operate then with these formulas as usual, treating dx and dy as if they were real quantities, and at a certain point I negate the negation, i.e., I integrate the differential formula, and in place of dx and dy put the real quantities x and y, and am then not where I was at the beginning, but by using this method I have solved the problem on which ordinary geometry and algebra break their jaws in vain.

PART II

Ch. II

Wherever *slavery* is the main form of production it turns labour into servile activity, consequently makes it dishonourable for freemen. Thus the way out of such a mode of production is barred, while on the other hand slavery is an impediment to more developed production, which urgently requires its removal. This contradiction spells the doom of all production based on slavery and of all communities based on it. A solution comes about in most cases through the forcible subjection of the deteriorating communities by other, stronger ones (Greece by Macedonia and later Rome). As long as these themselves have slavery as their foundation there is merely a shifting of the centre and a repetition of the process on a higher plane until (Rome) finally a people conquers that replaces slavery by another form of production. Or slavery is abolished by compulsion or voluntarily, whereupon *the former mode of production perishes* and large-scale cultivation is displaced by small-peasant squatters, as in America. For that matter Greece too perished on ac-

count of slavery, Aristotle having already said that intercourse with slaves was demoralizing the citizens, not to mention the fact that slavery makes work impossible for the latter. (Domestic slavery, such as exists in the Orient, is another matter. Here it does not form the basis of production directly but indirectly, as a constituent part of the family, and passes imperceptibly into the family (female harem slaves).

Ch. III

In Dühring's reprehensible history force holds sway. In the real, progressive historical movement, however, what dominates are the material gains which are retained.

Ch. III

How is force, the army, maintained? By *money*, hence again dependent on production. Cf. Athens' fleet and policy of 380-340. The force exercised against the allies came to nought for lack of the material means to wage long and energetic wars. The English subsidies, granted by the new industry, modern industry, defeated Napoleon.

Ch. III

[*The Party and Military Training*]

In considering the struggle for existence and Dühring's declamations against struggle and arms it should be emphasized that a revolutionary party must know also how to struggle. It will have to make the revolution, possibly some day in the near future, but not against the present military-bureaucratic state. Politically that would be as insane as Babeuf's attempt to jump from the Directory immediately into communism; even more insane, for the Directory was after all a bourgeois and peasant

government. But in order to safeguard the laws issued by the bourgeoisie itself the Party may be compelled to take revolutionary measures against the bourgeois state which will supersede the present state. Hence the universal conscription of our time should be taken advantage of by all to learn how to fight, but particularly by those whose education entitles them to acquire the training of an officer in one year's voluntary service.

Ch. IV

[*On "Force"*]

It is recognized that force also operates with revolutionary effect, namely, in all "critical" epochs of decisive importance, such as the transition to sociality, but even then only in self-defence against reactionary enemies abroad. However the upheaval in England in the sixteenth century depicted by Marx also had its revolutionary side. It was a basic condition of the conversion of feudal landed property into bourgeois landed property and of the development of the bourgeoisie. The French Revolution of 1789 likewise applied force to a considerable extent; August 4 merely sanctioned the peasants' deeds of violence and was supplemented by the confiscation of the estates of the nobility and church. The forcible conquest by the ancient Germans, the foundation, on conquered territory, of states in which the country, and not the town, dominated, as in antiquity, was accompanied—precisely for the latter reason—by the transformation of slavery into the milder serfdom, or feudal dependence (in antiquity the transformation of tilled land into pastures was a concomitant feature of the latifundia).

Ch. IV

[*Force, Community Property, Economics and Politics*]

When the Indo-Germans migrated to Europe they ejected the aboriginal inhabitants by *force* and tilled the land, which was owned by the community. Among the Celts, Germans and Slavs community ownership can still be traced historically and among the Slavs, Germans and also the Celts (rundale) it still exists even in the form of direct (Russia) or indirect (Ireland) feudal bondage. Force ceased as soon as the Lapps and Basques had been driven off. In internal affairs equality or voluntarily conceded privilege prevailed. Where private ownership of land by individual peasants arose out of common ownership, this division up to the sixteenth century took place purely spontaneously among the members of the community. It occurred in most cases quite gradually and remnants of common possession could be encountered very frequently. There was no idea of using *force*; it was applied only against these remnants (England in the eighteenth and nineteenth centuries, Germany mainly in the nineteenth century). Ireland is a special case. This common ownership quietly persisted in India and Russia under the most diverse forcible conquests and despotisms, and formed their basis. Russia is proof of how the relations of production determine the political relations of force. Up to the end of the seventeenth century the Russian peasant suffered little oppression, enjoyed the right of movement and was hardly a bondsman. The first Romanov attached the peasants to the soil. With Peter began the foreign trade of Russia, which had only agricultural products to export. *This* brought on the oppression of the peasants. It grew in the same measure as *exports, for the sake of which it had been introduced,*

until Catherine made the oppression complete and ended legislation on the subject. This legislation, however, permitted the landed proprietors to grind down the peasants more and more, so that their yoke became ever harder to bear.

Ch. IV

If force is the cause of social and political conditions, what is the cause of force? The appropriation of *products* of the labour of others and of labour-*power* of others. Force was able to change the consumption of products but not the mode of production itself; it could not transform bond labour into wage-labour unless the requisite conditions existed and bond labour had become a fetter on production.

Ch. IV

Hitherto force—from now on sociality. Purely a pious wish, a demand of "justice." Thomas More set up this demand already 350 years ago, but it has not yet been met. Why should it be fulfilled now? Dühring is at a loss for an answer. In reality, modern industry sets up this demand not as a demand of justice but as a necessity of production, and that changes everything.

PART III

Ch. I

Fourier (*Nouveau Monde Industriel et Sociétaire*).[1] Element of *inequality*: "man, being by instinct an enemy of equality," 59.

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[1] *New Industrial and Social World.* Words, phrases and sentences given in this excerpt in quotation marks were quoted by Engels from the original French of Fourier's works. The quotation marks have been supplied by the editor.—*Ed.*

"This swindling mechanism, which is called civilization," 81.

"One should avoid relegating them (women), as we are wont to do, to thankless tasks, to the menial roles assigned to them by the philosophy which claims that women were made only to wash pots and patch old trousers," 141.

"God has endowed manufacturing labour with a dose of attractiveness which corresponds to only *one quarter* of the time which social man can give to work." The rest is to be devoted to agriculture, cattle raising, the kitchen, the industrial armies, 152.

"Tender morality, the kind and pure friend of trade," 161. Critique of Morality, 162 *et seqq.*

In present-day society, "in the civilized mechanism," "duplicity of action, contradiction between individual and collective interests" dominate; it is "a universal war of the individuals against the masses. And our political sciences dare to speak of unity of action!" 172.

"The moderns failed everywhere in the study of nature because they did not know the theory of exceptions or transitions, the theory of *hybrids*." (Examples of "hybrids": the quince, nectarine, eel, bat, etc.) 191.

The second part of the MS of preparatory writings for *Anti-Dühring* consists of excerpts from Dühring's *Course of Political and Social Economy*, Engels's critical remarks being given parallel.

The quotations following are remarks by Engels which facilitate our understanding of the propositions developed in *Anti-Dühring*. The excerpts from Dühring are given here in abridged form. They are printed in small type and enclosed in square brackets.

[On Dühring's assertion that "the volitional activity by means of which the various forms of human association are created is itself subject to natural laws," Engels remarked:]

And so, no mention of *historical* development. Mere eternal law of nature. Everything is psychology and the

latter unfortunately is much more "backward" than politics.

[In connection with Dühring's disquisition on slavery, wage bondage and property based on force as "social-economic *constitutional forms* of a *purely political* nature," Engels wrote:]

Always the belief that political economy has only eternal laws of nature and that all change and distortion are brought about by wicked politics.

Hence this much is correct in the whole theory of force that hitherto all forms of society needed *force* to maintain themselves and to some extent or other were even established by force. This force, in its organized form, is called *state*. So we have here the banal idea that as soon as man rose above the wildest conditions states existed everywhere and the world did not wait for Dühring to learn this.

But state and force are precisely what all hitherto existing forms of society have had *in common*, and if I should try to explain, for instance, the Oriental despotisms, the republics of antiquity, the Macedonian monarchies, the Roman Empire and the feudalism of the Middle Ages by stating that they were all based on *force*, I have explained nothing as yet. The various social and political forms must therefore be explained not as due to force, which after all is always the same, but as due to that *to which the force is applied,* as due to *that which* is being robbed—the products and productive forces of the epoch in question and their distribution, resulting from them themselves. It would then appear that Oriental despotism was founded on common property, the antique republic on the cities engaged in agriculture, the Roman Empire on the latifundia, feudalism on the domination of the country over the town, which had its material causes, etc.

[Engels quoted the following from Dühring:

"The natural laws of economy can be revealed in all their strictness only by mentally obliterating the effects of the state and social institutions, particularly those of property based on force and connected with wage bondage, and by being careful not to regard the latter as necessary consequences of man's abiding nature (!)...."

Engels made the following comment on this discourse of Dühring's:]

So then the natural laws of economy are discovered only when one *abstracts one's mind from all hitherto existing economy;* until now they have never manifested themselves undistortedly!

Abiding nature of man—from ape to Goethe!

Dühring is supposed to explain by this theory of "force" how it happens that everywhere from time immemorial the majority has consisted of those subjected to force and the minority of those applying force. This alone is proof that the relation of force is based on the economic conditions, which it is not so simple to upset by political means.

In Dühring rent, profit, interest and wages are not explained; it is merely stated that they have been instituted by *force.* Whence force? *Non est.*[1] Force gives rise to possession and possession to economic power. Hence force-power.

Marx has shown in *Capital* (Accumulation) how at a certain stage of development the laws of commodity production necessarily engender capitalist production with all its chicanery and that *no force whatever is needed* for that purpose.

When Dühring considers political action to be the ultimate decisive power of history and would have you believe it was something new, he merely repeats what

[1] There is none, namely, no reply.—*Ed.*

was said by all former historians who also held the view that social forms are determined solely by political forms and not by production.

C'est trop bon![1] The whole Free Trade school, beginning with Adam Smith, indeed, all pre-Marxian political economy regards the economic laws, in so far as it understands them, as "natural laws" and maintains that their action is being distorted by the state, by the "action of the state and social institutions"!

Anyhow, this entire theory is merely an attempt to let Carey substantiate socialism: economics by itself is harmonious, the state by its interference spoils everything.

Eternal justice is a complement of force; it will appear on p. 282.

[Dühring's views, developed in his criticism of Smith, Ricardo and Carey, were characterized as follows by Engels: "In its most abstract form production may be studied quite well by taking Robinson as an example; distribution, by taking two people alone on an island and imagining all stages intermediate between complete equality and complete opposition between master and slave. . . ." Engels quotes the following sentence from Dühring: "The point of view which in the last analysis is really decisive for the theory of distribution can be arrived at only by *serious social* (!) meditation (!)." To which Engels remarked:]

So one first abstracts from real history the various legal relations and separates them from the historical basis on which they arose and on which alone they make sense and transfers them to two individuals, Robinson and Friday, where they naturally appear wholly arbitrary. After they have thus been reduced to pure force they are transferred back to real history, and thus one proves that here too everything is based on sheer force. That force must be applied to a material substratum and

[1] Fine!—*Ed.*

that the point is precisely to prove where this came from, leaves Dühring unaffected.

[Engels quoted the following passage from Dühring's *Course of Political and Social Economy*: "The traditional view shared by all systems of political economy considers distribution only what may be called a transient process which is concerned with a mass of products created by production and considered as finished joint output; ... a *deeper* foundation must rather scrutinize a distribution which is concerned with the economic or economically operating *laws* themselves and not only with the transient and accumulative consequences of these laws." Engels commented on this as follows:]

Thus it is not enough to investigate the distribution of current production.

Ground-rent presupposes landed property, profit—capital, wages—propertyless workers, possessors of labour-power only. Inquiry should therefore be made where this comes from. In so far as this was his concern, Marx did this in Volume I with regard to capital and propertyless labour-power; investigation of the origin of modern landed property belongs to ground-rent, and is therefore part of his Volume II. Dühring's investigation and historical foundation is confined to the single word "*force!*" Here there is direct *mala fides*.

For Dühring's explanation of big landed property see *Wealth* and *Value*; these had better be dealt with here.

And so it is force that creates the economic, political, etc., conditions of life of an epoch, a people, etc. But who creates force? Organized force is primarily *the army*. And nothing depends more on economic conditions than precisely the composition, organization, armament, strategy and tactics of an army. Armament is the foundation, and it in turn is directly dependent on the level of production. Arms of stone, bronze and iron, armour, cavalry, gunpowder, and then that tremendous revolution which modern industry had brought about in war-

fare by means of the rifled breech-loader and artillery—products which only modern industry with its rhythmically working machines that turn out almost absolutely identical products could manufacture. Composition and organization, strategy and tactics, in their turn, depend on armament. Tactics also on the means of communication—the dislocation of the troops and successes achieved in the battle of Jena would be impossible with the present chaussées—and lastly the railways! Hence it is precisely force that is dominated more than anything else by the existing conditions of production, something even Captain Jähns has realized. (*K. Z.*—Machiavelli, etc.)[1]

Particular stress is to be laid on modern methods of warfare, from the rifle and bayonet to the breech-loader, where the issue is decided not by the man with the sabre but by the weapon; by the line, or the column when the troops are bad, but it must be covered by riflemen (Jena contra Wellington), and finally by the general dispersion into skirmishers and the change from the slow march to the double.

[According to Dühring, "a skilled hand and a clever head must be regarded as a means of production belonging to society, as a *machine* whose output belongs to *society*. But while a machine *does not add value, a skilled hand does*!" To which Engels remarked:]

The economic law of value, *quant à cela*,[2] is therefore being prohibited and yet it is to remain in force.

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[1] Engels refers to a report printed in the *Kölnische Zeitung* (*Cologne Gazette*) of April 20, 1876, on a paper "Machiavelli and the Idea of Universal Conscription," read by Jähns before the Scientific Society in Berlin. Engels mentions this paper in Part II of *Anti-Dühring*, Ch. III (see p. 238 of the present edition).—*Ed.*

[2] As far as that goes.—*Ed.*

[On Dühring's conception of the "*politico-juridical foundation* of the whole of sociality" Engels had the following comment to make:]

Thus at once the idealist measuring stick is applied. Not production itself, but *law*.

[Concerning Dühring's "Commune" and the system of division of labour, distribution, exchange and money system obtaining in it, Engels remarked:]

Hence also *payment of wages* to the individual worker by society.

Hence also hoarding, usury, credit and all consequences up to and including money crises and money scarcity. Money explodes the economic commune as inevitably as at the present moment it is about to explode the Russian commune, and the family commune as well, once exchange between the individual members is brought about by the agency of money.

[Engels quoted the following sentence from Dühring, giving his comment in parentheses: "Real work in any form therefore constitutes the social law of nature governing healthy organizations (from which it follows that all prior ones were unhealthy)." This occasioned Engels to observe:]

Labour is here conceived either as economic, materially productive labour, in which case the sentence is nonsense and is at variance with all past history. Or labour is conceived in a more general form, so as to comprise every kind of activity necessary or useful in a period, such as governance, administration of justice and military exercises, in which case it is an enormously inflated platitude and has nothing to do with political economy. But to try to impress the Socialists with this old trash by styling it "natural law" is a trifle impudent.

[On Dühring's discussion of the connection between wealth and loot Engels remarked:]

Here we have his whole method. Every economic relation is first conceived from the point of view of *production,* apart from all historical determination. Hence only the most general of all generalities can be said, and if Dühring wants to go beyond that he must take into account the definite historical relations of the epoch in question, i.e., must tumble out of abstract production and create chaos. Then the same economic relation is conceived from the angle of *distribution*, i.e., the historical process that has gone on hitherto is reduced to the word *force*, after which indignation is voiced at the evil consequences of force. When we get to natural laws we shall see where this will bring us to.

[On Dühring's assertion that it takes slavery or feudal dependence to manage a large-scale enterprise Engels commented as follows:]

Therefore, firstly, the history of the world begins with large landed property! The cultivation of large tracts of land is identical with cultivation by large landed proprietors! Italy's soil, which was turned into pasturage by the latifundia, has lain untilled before! The United States of America owes its vast expansion not to free farmers but to slaves, serfs, etc.!

Again a *mauvais calembour*[1]: "Cultivation in tracts of considerable size" is to be equivalent to clearing them, but is immediately interpreted as cultivation on a large scale, is made equal to large landed property! And in this sense what an enormous new discovery that if some one possesses more land than he and his family can till he cannot farm it all without the labour of others! Moreover, *cultivation by serfs* is not cultivation of considerable tracts, but of *small holdings* and the cultivation always antedates the serfdom (Russia, the Flemish,

[1] Bad pun.—*Ed.*

Dutch and Frisian colonies in the Slavic mark, see Langethal[1]), the originally free peasants are *made* serfs, here and there *formally* even voluntarily.

[Dühring's statement that the magnitude of value is determined by the magnitude of the resistance which the process of satisfying wants encounters and which "necessitates a greater or lesser expenditure of economic energy" (!) evoked this comment by Engels:]

Overcoming resistance—a category borrowed from mathematical mechanics and rendered absurd in political economy. Instead of: "I successively spin, weave, bleach and print cotton" one must now say: "I overcome the resistance of the cotton to being spun, of the yarn to being woven, of the cloth to being bleached and printed." "I am making a steam-engine" means "I am overcoming the resistance of the iron to being transformed into a steam-engine." I am expressing the matter in high-sounding circumlocutions, which add nothing but distortion. But in this way I can bring in the *distribution value* where, too, there is supposed to be resistance that has to be overcome. That's why!

[Dühring claims that "distribution value exists in pure and exclusive form only where the power to dispose of unproduced things, or (!), to use a commoner expression, where these (unproduced!) things themselves are exchanged for services or things of real production value," to which Engels remarked:]

What is an unproduced thing? Land *cultivated the modern way*? or are things meant which the owner did not produce himself? But then there is the antithesis of "real production value." The following sentence shows that we have here again a *mauvais calembour*. Objects found in nature, which were not produced, are thrown on

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[1] Chr. Eb. Langethal, *Geschichte der deutschen Landwirtschaft* [*History of German Agriculture*] Jena, 1847-56.—*Ed.*

one pile with "component parts of value which are appropriated without counter-service."

[Dühring's claim that all human institutions are strictly determined but that, "unlike the play of external forces in nature," they are not at all "practically unalterable in their main features" was criticized by Engels as follows:]

Consequently it is and remains natural law.

That hitherto the laws of economy in all unplanned and unorganized production confront men as objective laws, against which they are powerless, hence *in the form of natural laws*—of that not a word.

[Dühring formulated the "basic law of all political economy" as follows: "The productivity of economic means—natural *resources and human energy—is enhanced by inventions and discoveries* and this takes place quite irrespective of distribution, which as such may nevertheless be subject to or cause considerable change, but does not determine the *imprint* (!) of the principal result." Engels's comment:]

The concluding part of the sentence: "and this takes place," etc., adds nothing new to the law, for if the law is true, distribution can change nothing in it and it is superfluous to say that it is correct for every form of distribution, otherwise it would not be a natural law. It is added, however, simply because Dühring was too ashamed to dish up this inane and utterly meaningless law in all its platitude. Besides it is self-contradictory, because, if distribution *may*, nevertheless, cause considerable change, one cannot say "quite irrespective" of it. We therefore delete the concluding part and then obtain the law pure and simple—*the fundamental law of all political economy.*

But this is not shallow enough.

[Dühring asserts that economic progress does not depend on the total of means of production "*but only on knowledge and the*

general technical methods of procedure," and this, in Dühring's opinion, "appears at once, if capital is understood *in its natural meaning*, as an instrument of production." On this Engels remarked:]

The steam plows of the Khedive lying in the Nile and the threshing machines, etc., of the Russian nobility standing idle in their sheds are proof of this. Steam, etc., too has its historical prerequisite conditions which, while comparatively easy to establish, must nevertheless be established. But Dühring is quite proud of having thereby deteriorated that thesis, the sense of which is wholly different, to such an extent that this "idea coincides with our law of overriding importance." The economists still thought this law contained something substantial. Dühring has reduced it to the merest commonplace.

[Dühring's formulation of the "*natural law* of the division of labour" states: "The cleaving of trades and the dissection of activities raises the productivity of labour." On this Engels observed:]

This formulation is wrong, as it is right only for bourgeois production and the division into specialities here too is already becoming restrictive of production because it cripples and ossifies the individual and in the future will cease altogether. We can see already here that this division into specialities in the manner of *today* is to Dühring's mind something permanent, valid also for the *sociality*.

INFANTRY TACTICS, DERIVED FROM MATERIAL CAUSES 1700-1870

In the fourteenth century gunpowder and fire-arms became known in Western and Central Europe and every school child knows that these purely technical advances wholly revolutionized methods of warfare. But this revolution proceeded at a very slow pace. The first fire-arms were very crude, particularly the arquebus. And although a great number of separate improvements were invented at an early date—the rifled barrel, the breech-loader, the wheel-lock, etc.—still it took over three hundred years before, at the end of the seventeenth century, a musket was constructed suitable for equipping the entire body of infantry.

In the sixteenth and seventeenth centuries the foot-soldiery consisted partly of pikemen and partly of arquebusiers. Originally the pike carriers' task was to effect a decision by charging the enemy, while the arquebus fire served the purposes of defence. The pikemen therefore fought in compact masses many ranks deep, like in the ancient Greek phalanx; the arquebusiers stood in formations eight to ten ranks in depth, because that many could fire in succession before one could load. Anyone whose weapon was loaded jumped in front, fired and withdrew to the last rank in order to load again.

The gradual perfection of fire-arms changed this relation. The matchlock musket could finally be loaded so

rapidly that only five men, i.e., troops only five men deep, were required to maintain continuous fire. Thus the same number of musketeers could now hold a front almost twice as long as before. Because of the much more devastating effect of gun-fire on mass formations many men deep the pikemen too were now drawn up in only six to eight ranks, so that the battle order gradually approximated the line formation, in which musket fire decided the issue and the pikemen were no longer kept for the attack but only as cover for the sharpshooters against mounted troops. At the end of this period we find a battle array consisting of two combat detachments and a reserve, each detachment drawn up in line, mostly six men deep, guns and horsemen partly in the intervals between battalions, partly at the wings; each infantry battalion consisted at the most of one-third pikemen and at least of two-thirds musketeers.

At the end of the seventeenth century the flint-lock musket with a bayonet and ready-made cartridges was at last produced. With this the pike disappeared once and for all from infantry service. Loading took less and less time, the more rapid fire was itself a protection and the bayonet replaced the pike in case of necessity. Thus the depth of the line could be reduced from six to four, later to three and finally here and there to two ranks. Hence the line lengthened steadily with the same number of men, and even more muskets were in use simultaneously. But these long, thin lines became thereby also more and more unwieldy and could move in formation only on level, unobstructed ground, and even then only very slowly, 70-75 paces a minute; and it was just in a plain that the line, in particular its flanks, offered the enemy cavalry prospects of successful attack. Partly to protect these flanks and partly to strengthen the fighting line, which decided the day, the cavalry was totally massed on the wings

so that the battle line proper consisted solely of footmen and their light battalion guns. The extremely unwieldy heavy guns were mounted in front of the wings and changed position at the most only once during a battle. The foot-soldiers were drawn up in two detachments whose flanks were covered by infantry drawn up at an angle, the whole array forming a single very long hollow rectangle. This cumbrous mass, when it was not to move as a whole, could only be divided into three parts, the centre and the two wings. This shifting of parts was confined to moving up the wing numerically superior to the enemy's in order to outflank him, while the other wing was held back as a menace, to prevent him from re-arranging his front accordingly. A complete change in the dislocation of troops during a battle consumed so much time and exposed so many weak spots to the enemy that the attempt almost always ended in defeat. The original array therefore governed throughout the battle and as soon as the footmen joined battle one crushing blow decided the day. This entire method of warfare, developed to the highest pitch by Frederick II, was the inevitable result of two jointly operating material factors: first, the human material of that time, the mercenary armies of princes, rigorously drilled but quite unreliable and only held together by the rod, many of them hostile prisoners of war who had been pressed into service; and second, the armament—the cumbersome heavy guns and the smoothbore rapid- but badly-firing flint-lock muskets with bayonets.

This method of combat prevailed as long as both adversaries remained on the same level with regard to manpower and armament and it suited both to adhere to the prescribed rules. But when the American War of Independence broke out the well-drilled mercenary troops were unexpectedly met by hordes of rebels who, while not

knowing how to exercise, were splendid shots who for the most part carried accurate rifles and fought in their own cause, hence did not desert. These rebels did not do the English troops the favour of dancing with them the well-known battle minuet, stepping slowly across open plain, observing all the traditional rules of military etiquette. They drew their opponent into dense forests, where his long columns in marching order were, without the possibility of defence, exposed to the fire of scattered invisible skirmishers. Operating in loose order they took advantage of every bit of cover the terrain afforded to harass the enemy, maintaining at the same time great mobility that could never be matched by the cumbersome mass of his soldiers. The combat fire of scattered skirmishers, which had been of importance as early as the introduction of the protable fire-arm, proved therefore superior here, in certain cases, particularly in small encounters, to the linear formation.

The soldiers that composed the mercenary troops of Europe were not suitable for fighting in loose order; their armament was still less so. True, the musket was no longer pressed against the chest on firing, as had been necessary with the old matchlocks; the musket was brought up to the shoulder, as now. But there could still be no question of aiming, since with a perfectly straight stock continuing the line of the barrel the eye could not freely run down the latter. It was only in 1777 that in France the slanting of the butt characteristic of the hunting rifle was also adopted for the infantry rifle and effective tirailleur fire made possible. A second improvement to be mentioned was the lighter but still solid gun-carriage constructed in the middle of the eighteenth century by Gribeauval, which alone made possible the greater mobility later demanded of artillery.

It was reserved to the French Revolution to utilize these two technical improvements on the field of battle. When allied Europe attacked it it placed at the disposal of the government all the members of the nation capable of bearing arms. But this nation had no time to practise the intricate manoeuvres of linear tactics sufficiently to be able to oppose the veteran Prussian and Austrian infantry in similar formation. On the other hand, France lacked not only the primeval forests of America but also its virtually boundless territory for retreat. What was needed was to defeat the enemy between the frontier and Paris, that is, to defend a definite area, and that in the long run could be done only in open mass battle. Consequently it became necessary to find, in addition to the skirmish chains, still another form in which the badly drilled French masses could face Europe's standing armies with some prospect of success. This form was found in the close column, which was already being used in certain cases, but mostly on parade grounds. The column was easier to keep in order than the line. Even when thrown somewhat into disarray its compact mass nevertheless continued to offer at least passive resistance. The column was easier to handle, was more under the direct control of the commander and could move faster. Its speed rose to 100 paces and more a minute. But the most important result consisted in the following: the use of the column as the exclusive mass battle formation made it possible to divide up the cumbrous uniform whole of the old linear order of battle into separate parts, each granted a certain degree of independence, each adapting its general instructions to the circumstances confronted, and each composed, if so desired, of all three arms of the service. The column was plastic enough to permit of every possible combination of troop employment; it allowed the use of villages and farm-houses, which Frederick II had still

strictly forbidden; henceforth they became the main points of support in every battle. The column could be employed in any terrain; and finally it could counter linear tactics —where all was staked on one card—with combat tactics in which the line was fatigued and so worn down by skirmish chains and the gradual use of troops to protract the engagement that it could not withstand the thrust of the fresh fighters that had been kept in reserve to the very end. Whereas the linear formation was equally strong at all points, an adversary fighting in close column formation could keep part of the line engaged by feint attacks of small bodies of troops and concentrate his main force for the assault on the key position.

Loose bodies of skirmishers now did most of the firing while the columns attacked with the bayonet. This restored the similar relation that had existed between the skirmish chains and the mass of pikemen at the beginning of the sixteenth century, with the exception, however, that the modern columns could at any time disperse to form skirmish chains and the latter again mass to form columns.

This new method of combat, the use of which Napoleon developed to the acme of perfection, was so superior to the old that the latter hopelessly collapsed when faced by it, the last time being at Jena, where the cumbersome, slow-moving Prussian lines, largely useless for skirmishing, virtually melted away when the French tirailleurs poured in their fire, to which they could reply only with platoon fire. But even if the linear battle order succumbed, this was by no means true of the line as combat formation. A few years after the Prussians had made out so badly with their lines at Jena, Wellington led his English troops in line formation against the French columns and as a rule beat them. But Wellington, to be sure, had adopted the whole of French tactics, with the exception that he

had his close-formation infantry fight in line, and not in column formation. He thus secured the advantage of bringing into simultaneous action, when firing, all his rifles, and when attacking, all his bayonets. In this battle array the English fought up to a few years ago and got the best of the bargain both in attack (Albuhera) and defence (Inkerman) even when considerably outnumbered. Until his death, Bugeaud, who had faced those English lines, preferred them to the column.

Moreover, the infantry fire-arm was extremely bad, so bad that at a hundred paces it could hit a person standing alone only seldom and at three hundred paces a whole battalion just as seldom. Thus, when the French came to Algiers they suffered heavy losses from the Bedouins' long fire-lock muskets fired at distances at which their own muskets scored no hits. Here only the rifled musket could be of any use. But it was precisely in France that the rifle, even as an emergency weapon, had always been objected to, because it took so long to load and clogged so quickly. But now when the need for an easily loaded musket made itself felt it was met at once. The preparatory work of Delvigne was followed by Thouvenin's tige-rifle and Minié's expansive bullets, the latter having placed the rifled and the smoothbore musket on an absolute par with regard to loading time, so that now the entire infantry could be equipped with accurate long-range rifles. But before the rifled muzzle-loader could establish the tactics suitable to its use it was supplanted by the most up-to-date weapon, the rifled breech-loader, while at the same time rifled ordnance developed ever-increasing efficiency.

The arming of the entire nation, which the revolution had ushered in, soon experienced considerable restriction. Only part of the young people liable to military service were called up, by lot, into the standing army and a

greater or smaller part of the rest of the citizens were, at most, formed into an untrained National Guard. Or, in those countries where universal conscription was really strictly enforced, as in Switzerland, at most a militia was formed which was drilled under the colours for no more than a few weeks. Financial considerations made necessary the choice between conscription and militia. Only one country in Europe, and at that one of the poorest, attempted to combine universal conscription and standing army. That was Prussia. And even though the universal obligation to serve in the standing army was enforced only approximately, also necessitated by financial considerations, the Prussian *Landwehr*[1] system nevertheless placed at the disposal of the government such a considerable number of trained people organized in ready cadres that Prussia was decidedly superior to any other country of equal population.

In the Franco-German War of 1870 the French conscription system succumbed to the Prussian *Landwehr* system. In this war, however, both sides were for the first time equipped with breech-loading rifles, while the regulations for moving and fighting remained essentially the same as at the time of the old flint-locks. At most the tirailleur chains were somewhat more compact. As for the rest, the French still fought in the old battalion column formation, at times also in line formation, while on the German side at least an attempt was made, in the introduction of the company column formation, to find a form of fighting which was better adapted to the new type of arms. Thus one managed in the first few battles. But when, in the storming of Saint Privat (August 18) three brigades of the Prussian Guard tried to apply the company column formation seriously, the devastating power of the breech-

[1] See note, p. 234.—*Ed.*

loaders became apparent. Of the five chiefly engaged regiments (15,000 men) almost all officers (176) and 5,114 men, that is, upwards of one-third, fell. The Guard Infantry alone, whose strength had been 28,160 men when it joined the fray, lost 8,230 men including 307 officers that day. From that time on the company column as a battle formation was condemned no less than the battalion mass formation or the line. All idea of further exposing troops in any kind of close formation to enemy rifle fire was abandoned; on the German side all subsequent fighting was conducted only in those compact chains of tirailleurs into which the columns had so far regularly dispersed of themselves under a deadly hail of bullets, although this had been opposed by the higher commands on the ground that it was contrary to good battle formation. Once again the soldier had been shrewder than the officer; it was *he* who instinctively found the only way of fighting which has proved of service up to now under the fire of breech-loading rifles, and in spite of opposition from his officers he carried it through successfully. Likewise *the double* was the only step now used within the range of the frightful rifle fire.

NOTES TO *ANTI-DÜHRING*[1]

(a) On the Prototypes of the Mathematical "Infinite" in the Real World

Re pp. 17-18:[2] *Concordance of thought and being.*—The Infinite in *Mathematics*

The fact that our subjective thought and the objective world are subject to the same laws, and hence, too, that in the final analysis they cannot contradict each other in their results, but must coincide, governs absolutely our whole theoretical thought. It is the unconscious and unconditional premise for theoretical thought. Eighteenth century materialism, owing to its essentially metaphysical character, investigated this premise only as regards content. It restricted itself to the proof that the content of all thought and knowledge must derive from sensuous experience, and revived the principle: *nihil est in intellectu, quod non fuerit in sensu.*[3] It was modern idealistic, but at the same time dialectical, philosophy, and especially

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[1] These notes were written, in all probability, early in 1885, when Engels was getting ready to prepare the second, *enlarged* edition of *Anti-Dühring* for the press. He intended to write a number of addenda to various passages in this work and to insert them at the end of the second edition.—*Ed.*

[2] The pages refer to the first German edition of *Anti-Dühring*, which appeared in the summer of 1878. They correspond to pp. 54-56, Part I, Ch. III of the present edition.—*Ed.*

[3] The intellect contains nothing that was not contained in the senses.—*Ed.*

Hegel, which for the first time investigated it also as regards *form*. In spite of all the innumerable arbitrary constructions and fantasies that we encounter here, in spite of the idealist, topsy-turvy form of its result—the unity of thought and being—it is undeniable that this philosophy proved the analogy of the processes of thought to those of nature and history and vice versa, and the validity of similar laws for all these processes, in numerous cases and in the most diverse fields. On the other hand, modern natural science has extended the principle of the origin of all thought-content from experience in a way that breaks down its old metaphysical limitation and formulation. By recognizing the inheritance of acquired characters, it extends the subject of experience from the individual to the genus; the single individual that must have experienced is no longer necessary, its individual experience can be replaced to a certain extent by the results of the experiences of a number of its ancestors. If, for instance, among us the mathematical axioms seem self-evident to every eight-year-old child, and in no need of proof from experience, this is solely the result of "accumulated inheritance." It would be difficult to teach them by a proof to a Bushman or Australian Negro.

In the present work dialectics is conceived as the science of the most general laws of *all* motion. This implies that its laws must be valid just as much for motion in nature and human history as for the motion of thought. Such a law can be recognized in two of these three spheres, indeed even in all three, without the metaphysical philistine being clearly aware that it is one and the same law that he has come to know.

Let us take an example. Of all theoretical advances there is surely none that ranks so high as a triumph of the human mind as the discovery of the infinitesimal calculus in the last half of the seventeenth century. If any-

where, it is here that we have a pure and exclusive feat of human intelligence. The mystery which even today surrounds the magnitudes employed in the infinitesimal calculus, the differentials and infinites of various degree, is the best proof that it is still imagined that what are dealt with here are pure "free creations and imaginations"[1] of the human mind, to which there is nothing corresponding in the objective world. Yet the contrary is the case. Nature offers prototypes for all these imaginary magnitudes.

Our geometry takes, as its starting-point, space relations and our arithmetic and algebra numerical magnitudes, which correspond to our terrestrial conditions, which therefore correspond to the magnitude of bodies that mechanics terms masses—masses such as occur on earth and are moved by men. In comparison with these masses, the mass of the earth seems infinitely large and indeed terrestrial mechanics treats it as infinitely large. The radius of the earth $= \infty$, this is the basic principle of all mechanics in the law of falling. But not merely the earth but the whole solar system and the distances occurring in the latter in their turn appear infinitely small as soon as we have to deal with the distances reckoned in light years in the stellar system visible to us through the telescope. We have here, therefore, already an infinity, not only of the first but of the second degree, and we can leave it to the imagination of our readers to construct further infinities of a higher degree in infinite space, if they feel inclined to do so.

According to the view prevailing in physics and chemistry today, however, the terrestrial masses, the bodies with which mechanics operates, consist of molecules, of smallest particles which cannot be further divided without

[1] An expression used by Dühring.—*Ed.*

abolishing the physical and chemical identity of the body concerned. According to W. Thomson's calculations, the diameter of the smallest of these molecules cannot be smaller than a fifty-millionth of a millimetre.[1] But even if we assume that the largest molecule itself attains a diameter of a twenty-five-millionth of a millimetre, it still remains an infinitesimally small magnitude compared with the smallest mass dealt with by mechanics, physics, or even chemistry. Nevertheless, it is endowed with all the properties peculiar to the mass in question, it can represent the mass physically and chemically, and does actually represent it in all chemical equations. In short, it has the same properties in relation to the corresponding mass as the mathematical differential has in relation to its variables. The only difference is that what seems mysterious and inexplicable to us in the case of the differential, in the mathematical abstraction, here seems a matter of course and as it were obvious.

Nature operates with these differentials, the molecules, in exactly the same way and according to the same laws as mathematics does with its abstract differentials. Thus, for instance, the differential of $x^3 = 3x^2dx$, where $3xdx^3$ and dx^3 are neglected. If we put this in geometrical form, we have a cube with sides of length x, the length being increased by the infinitely small amount dx. Let us suppose that this cube consists of a sublimated element, say, sulphur; and that three of the surfaces around one corner are protected, the other three being free. Let us now expose this sulphur cube to an atmosphere of sulphur vapour and lower the temperature sufficiently; sulphur will

[1] This figure is cited in William Thomson's article "The Size of Atoms," which originally appeared in the journal *Nature* of March 31, 1870 (Vol. I, p. 553) and was reprinted as an appendix in the second (1883) edition of *Treatise on Natural Philosophy* by Thomson and Tait.—*Ed.*

be deposited on the three free sides of the cube. We remain quite within the ordinary mode of procedure of physics and chemistry in supposing, in order to picture the process in its pure form, that in the first place a layer of the thickness of a single molecule is deposited on each of these three sides. The length x of the sides of the cube has increased by the diameter of a molecule dx. The content of the cube x^3 has increased by the difference between x^3 and $x^3 + 3x^2dx + 3xdx^2 + dx^3$, where dx^3, a *single* molecule, and $3xdx^2$, three rows of length $x + dx$, consisting simply of lineally arranged molecules, can be neglected with the same justification as in mathematics. The result is the same, the increase in mass of the cube is $3x^2dx$.

Strictly speaking dx^3 and $3xdx^2$ do not occur in the case of the sulphur cube, because two or three molecules cannot occupy the same space, and the cube's increase of bulk is therefore exactly $3x^2dx + 3xdx + dx$. This is explained by the fact that in mathematics dx is a linear magnitude, while it is well known that such lines, without thickness or breadth, do not occur independently in nature, hence also the mathematical abstractions have unrestricted validity only in pure mathematics. And since the latter neglects $3xdx^2 + dx^3$, it makes no difference.

Similarly in evaporation. When the uppermost molecular layer in a glass of water evaporates, the height of the water layer, x, is decreased by dx, and the continual flight of one molecular layer after another is actually a continued differentiation. And when the hot vapour is once more condensed to water in a vessel by pressure and cooling, and one molecular layer is deposited on another (it is permissible to leave out of account secondary circumstances that make the process an impure one) until the vessel is full, then literally an integration has been performed which differs from the mathematical

one only in that the one is consciously carried out by the human brain, while the other is unconsciously carried out by nature. But it is not only in the transition from the liquid to the gaseous state and vice versa that processes occur which are completely analogous to those of the infinitesimal calculus.

When mass motion, as such, is abolished—by impact—and becomes transformed into heat, molecular motion, what is it that happens but that the mass motion is differentiated? And when the movements of the molecules of steam in the cylinder of the steam-engine become added together so that they lift the piston by a definite amount, so that they become transformed into mass motion, have they not been integrated? Chemistry dissociates molecules into atoms, magnitudes of lesser mass and spatial extension, but magnitudes of the same order, so that the two stand in definite, finite relations to one another. Hence, all the chemical equations which express the molecular composition of bodies are in their form differential equations. But in reality they are already integrated owing to the atomic weights which figure in them. For chemistry calculates with differentials, the mutual relation of the magnitudes of which is known.

Atoms, however, are in no wise regarded as simple, or in general as the smallest known particles of matter. Apart from chemistry itself, which is more and more inclining to the view that atoms are compound, the majority of physicists assert that the universal ether, which transmits light and heat radiations, likewise consists of discrete particles, which, however, are so small that they have the same relation to chemical atoms and physical molecules as these have to mechanical masses, that is to say as d^2x to dx.

Here, therefore, in the now usual notion of the constitution of matter, we have likewise a differential of

the second degree, and there is no reason at all why anyone, to whom it would give satisfaction, should not imagine that analogies of d^3x, d^4x, etc., also occur in nature.

Hence, whatever view one may hold of the constitution of matter, this much is certain, that it is divided up into a series of big, well-defined groups of a relatively different mass character in such a way that the members of each separate group stand to one another in definite, finite mass ratios, in contrast to which those of the next group stand to them in the ratio of the infinitely large or infinitely small in the mathematical sense. The visible system of stars, the solar system, terrestrial masses, molecules and atoms, and finally ether particles, form each of them such a group. It does not alter the case that intermediate links can be found between the separate groups. Thus, between the masses of the solar system and terrestrial masses come the asteroids (some of which have a diameter no greater than, for example, that of the younger branch of the Reuss principality[1]), meteorites, etc. Thus, in the organic world the cell stands between terrestrial masses and molecules. These intermediate links prove only that there are no leaps in nature, *precisely because* nature is composed entirely of leaps.

In so far as mathematics calculates with real magnitudes, it also employs this mode of outlook without hesitation. For terrestrial mechanics the mass of the earth is regarded as infinitely large, just as for astronomy terrestrial masses and the meteorites corresponding to them are regarded as infinitely small, and just as the distances and masses of the planets of the solar system dwindle to nothing as soon as astronomy investigates the constitu-

[1] One of the dwarfish states that formed part of the second German Empire.—*Ed.*

tion of our stellar system extending beyond the nearest fixed stars. As soon, however, as the mathematicians withdraw into their impregnable fortress of abstraction, so-called pure mathematics, all these analogies are forgotten, infinity becomes something totally mysterious, and the manner in which operations are carried out with it in analysis appears as something absolutely incomprehensible, contradicting all experience and all reason. The stupidities and absurdities by which mathematicians have rather excused than explained their mode of procedure, which remarkably enough always leads to correct results, exceed the worst apparent and real fantasies, e.g., of the Hegelian philosophy of nature, about which mathematicians and natural scientists can never adequately express their horror. What they charge Hegel with doing, viz., pushing abstractions to the extreme limit, they do themselves on a far greater scale. They forget that the whole of so-called pure mathematics is concerned with abstractions, that *all* its magnitudes, strictly speaking, are imaginary, and that all abstractions when pushed to extremes are transformed into nonsense or into their opposite. Mathematical infinity is taken from reality, although unconsciously, and therefore can only be explained from reality and not from itself, from mathematical abstraction. And, as we have seen, if we investigate reality in this regard we come also upon the real relations from which the mathematical relation of infinity is taken, and even the natural analogies of the mathematical way in which this relation operates. And thereby the matter is explained.

(Haeckel's bad reproduction of the identity of thinking and being. But also *the contradiction between continuous and discrete matter*; see Hegel).[1]

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[1] The last three lines are an addendum, by Engels.—*Ed.*

(b) On the "Mechanical" Conception of Nature

Re page 46[1]: *The various forms of motion and the sciences dealing with them.*

Since the above article appeared (*Vorwärts, Feb. 9* 1877),[2] Kekulé (*Die wissenschaftlichen Ziele und Leistungen der Chemie*)[3] has defined mechanics, physics, and chemistry in a quite similar way:

"If this idea of the nature of matter is made the basis, one could define chemistry as the science of atoms and physics as the science of molecules, and then it would be natural to separate that part of modern physics which deals with masses as a special science, reserving for it the name of mechanics. Thus mechanics appears as the basic science of physics and chemistry, in so far as in certain aspects and especially in certain calculations both of these have to treat their molecules or atoms as masses."

It will be seen that this formulation differs from that in the text[4] and in the previous note only by being rather less definite. But when an English journal (*Nature*) put the above statement of Kekulé in the form that mechanics is the statics and dynamics of masses, physics the statics and dynamics of molecules, and chemistry the statics and dynamics of atoms,[5] then it seems to me that

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[1] The page number refers to the first German edition of *Anti-Dühring*. It is the first page of Part I, Ch. VII, *Natural Philosophy. The Organic World.—Ed.*

[2] The issue of the newspaper *Vorwärts* in which Ch. VII of *Anti-Dühring*, which was being published in serial form, originally appeared.—*Ed.*

[3] *The Scientific Aims and Achievements of Chemistry.—Ed.*

[4] That is, in the text of *Anti-Dühring*, Part I, beginning of Ch. VII.—*Ed.*

[5] Engels refers to a news item in the November 15, 1877 issue of the journal *Nature*, which contained a brief summary of Kekulé's paper.—*Ed.*

this unconditional reduction of even chemical processes to merely mechanical ones unduly restricts the field, at least of chemistry. And yet it is so much the fashion that, for instance, Haeckel continually uses "mechanical" and "monistic" as having the same meaning, and in his opinion "modern physiology... in its field allows only of the operation of physico-chemical—or *in the wider sense*, mechanical—forces." (*Perigenesis.*)[1]

If I term physics the mechanics of molecules, chemistry the physics of atoms, and furthermore biology the chemistry of albumens, I wish thereby to express the passing of any one of these sciences into one of the others, hence both the connection, the continuity, and the distinction, the discrete separation. To go further and to define chemistry as likewise a kind of mechanics seems to me inadmissible. Mechanics—in the wider or narrower sense—knows only quantities, it calculates with velocities and masses, and at most with volumes. Where the quality of bodies comes across its path, as in hydrostatics and aerostatics, it cannot achieve anything without going into molecular states and molecular motion, it is itself only an auxiliary science, the prerequisite for physics. In physics, however, and still more in chemistry, not only does continual qualitative change take place in consequence of quantitative change, the transformation of quantity into quality, but there are also many qualitative changes to be taken into account whose dependence on quantitative change is by no means proven. That the present tendency of science goes in this direction can be readily granted, but does not prove that this direction is the exclusively correct one, that the pursuit of this tendency will *exhaust*

[1] Engels quotes from Haeckel's *Die Perigenesis der Plastidule oder die Wellenzeugung der Lebensteilchen. Ein Versuch zur mechanischen Erklärung der elementaren Entwickelungs-Vorgänge.* Berlin 1876. Italics by Engels.—*Ed.*

the whole of physics and chemistry. All motion includes mechanical motion, change of place of the largest or smallest portions of matter, and the *first* task of science, but only the *first*, is to obtain knowledge of this motion. But this mechanical motion does not exhaust motion as a whole. Motion is not merely change of place, in fields higher than mechanics it is also change of quality. The discovery that heat is a molecular motion was epoch-making. But if I have nothing more to say of heat than that it is a certain displacement of molecules, I should best be silent. Chemistry seems to be well on the way to explaining a number of chemical and physical properties of elements from the ratio of the atomic volumes to the atomic weights. But no chemist would assert that all the properties of an element are exhaustively expressed by its position in the Lothar Meyer curve,[1] that it will ever be possible by this alone to explain, for instance, the peculiar constitution of carbon that makes it the essential bearer of organic life, or the necessity for phosphorus in the brain. Yet the "mechanical" conception amounts to nothing else. It explains all change from change of place, all qualitative differences from quantitative ones and overlooks that the relation of quality and quantity is reciprocal, that quality can become transformed into quantity just as much as quantity into quality, that, in fact, reciprocal action takes place. If all differences and changes of quality are to be reduced to quantitative differences and changes, to mechanical displacement, then we inevitably arrive at the

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[1] The Lothar Meyer curve demonstrates the ratios of the atomic weights of elements to their atomic volumes. Meyer's article "Die Natur der chemischen Elemente als Funktion ihrer Atomgewichte" appeared in 1870. The discoverer of the Periodic Law of chemical elements was the great Russian scientist Dmitri I. Mendeleyev, who first formulated it in 1869 in his article "On the Relation of the Properties of Elements to their Atomic Weights."—*Ed.*

proposition that all matter consists of *identical* smallest particles, and that all qualitative differences of the chemical elements of matter are caused by quantitative differences in number and by the spatial grouping of those smallest particles to form atoms. But we have not got so far yet.

It is our modern natural scientists' lack of acquaintance with any other philosophy than the most mediocre vulgar philosophy, like that now rampant in the German universities, which allows them to use expressions like "mechanical" in this way, without taking into account, or even suspecting, the consequences with which they thereby necessarily burden themselves. The theory of the absolute qualitative identity of matter has its supporters—empirically it is equally impossible to refute it or to prove it. But if one asks these people who want to explain everything "mechanically" whether they are conscious of this consequence and accept the identity of matter, what a variety of answers will be heard!

The most comical part about it is that to make "materialist" equivalent to "mechanical" derives from *Hegel*, who wanted to throw contempt on materialism by the addition "mechanical." Now the materialism criticized by Hegel—the French materialism of the eighteenth century—was in fact exclusively *mechanical*, and indeed for the very natural reason that at that time physics, chemistry, and biology were still in their infancy, and were very far from being able to offer the basis for a general outlook of nature. Similarly Haeckel takes from Hegel the translation *causae efficientes*—mechanically acting causes, and *causae finales*—purposively acting causes; where Hegel, therefore, puts mechanical as equivalent to blindly acting, unconsciously acting, and not as equivalent to mechanical in Haeckel's sense of the word. But this whole antithesis is for Hegel himself so much a

superseded standpoint that he *does not even mention it* in either of his two expositions of causality in his *Logic*—but only in his *History of Philosophy*, in the place where it comes historically (hence a sheer misunderstanding on Haeckel's part due to superficiality!) and quite incidentally in dealing with teleology (*Logic*, III, II, 3)[1] where he mentions it as the form in which the *old metaphysics* conceived the antithesis of mechanism and teleology, but otherwise treating it as a long superseded standpoint. Hence Haeckel copied incorrectly in his joy at finding a confirmation of his "mechanical" conception and so arrives at the beautiful result that if a particular change is produced in an animal or plant by natural selection it has been effected by a *causa efficiens*, but if the same change arises by *artificial* selection then it has been effected by a *causa finalis*! The breeder a *causa finalis*! Of course a dialectician of Hegel's calibre could not be caught in the vicious circle of the narrow antithesis of *causa efficiens* and *causa finalis*. And for the modern standpoint the whole hopeless rubbish about this antithesis is put an end to because we *know* from experience and from theory that both matter and its mode of existence, motion, are uncreatable and are, therefore, their own final cause; while to give the name *effective* causes to the individual causes which momentarily and locally become isolated in the mutual interaction of the motion of the universe, or which are isolated by our reflecting mind, adds absolutely no new determination but only a confusing element. A cause that is not effective is no cause.

N.B.—Matter as such is a pure creation of thought and an abstraction. We leave out of account the qualita-

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[1] Engels refers to the third volume of Hegel's *Science of Logic* (Doctrine of the Notion), Part II, Ch. III.—*Ed.*

tive differences of things in lumping them together as corporeally existing things under the concept matter. Hence matter as such, as distinct from definite, existing pieces of matter, is not anything sensuously existing. If natural science directed its efforts to seeking out uniform matter as such, to reducing qualitative differences to merely quantitative differences in combining identical smallest particles, it would be doing the same thing as demanding to see fruit as such instead of cherries, pears, apples, or the mammal as such instead of cats, dogs, sheep, etc., gas as such, metal, stone, chemical compound as such, motion as such. The Darwinian theory demands such a primordial mammal, Haeckel's pro-mammal, but, at the same time, it has to admit that if this pro-mammal contained within itself in *germ* all future and existing mammals, it was in reality lower in rank than all existing mammals and primitively crude, hence more transitory than any of them. As Hegel has already shown (Encyclopaedia I, p. 199), this view, this "one-sided mathematical view," according to which matter must be looked upon as having only quantitative determination, but, qualitatively, as identical originally, is "no other than that" of the French materialism of the eighteenth century. It is even a retreat to Pythagoras, who regarded number, quantitative determination as the essence of things.

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